*i*CON-XT Server

User's Manual

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Chapter 1. About the iCON-XT

About the Product

The iCON-XT is a 3U, rack-mountable enterprise class server that can serve up to 20 Twinax consoles. Equipped with a 3.0+Ghz Xeon processor, redundant power supplies, and a hardened Linux OS, the iCON-XT provides full console operations from anywhere in your network. The secure, browser based XT configuration simplifies the deployment and management of LAN and Remote Console Solutions.

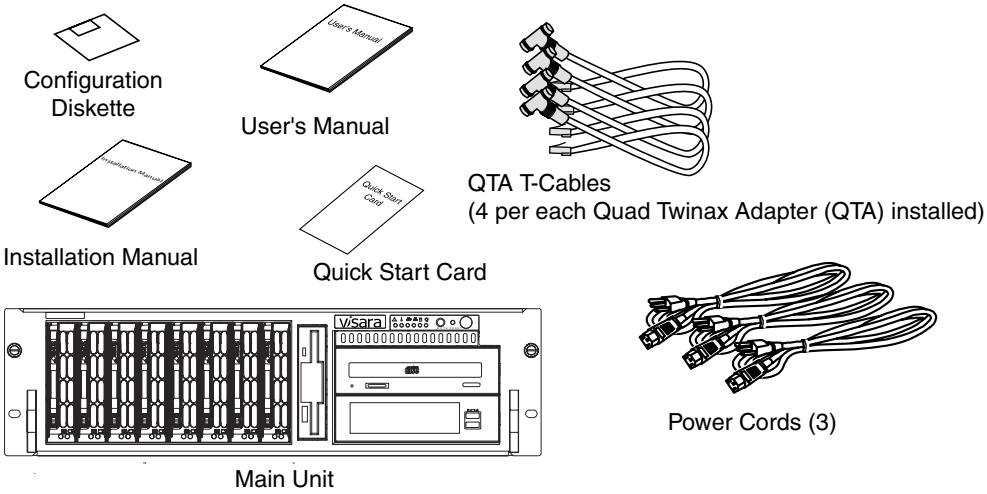
The resident Linux operating system provides a reliable and flexible OS platform that hosts key emulations supporting full midrange console operations. The included emulator suite supports TN5250 and TN3270 for attachment to host applications for real time system debug and program distribution.

The VT5250 emulation, when used with the iCON-XT, provides a true green screen "look and feel" to console sessions. True 25th line "message line" screen presentation is maintained, even when the VT5250 is running on a Microsoft Windows based PC. User configurable screen color attributes allows the console messages to be highlighted for maximum impact.

Secure remote console access is provided by Secure Sockets Layer (SSL) protocol, built in to both client and server applications and authenticated with usernames/ passwords. The authentication list can be managed locally on each iCON, or one iCON can administer the list for the others.

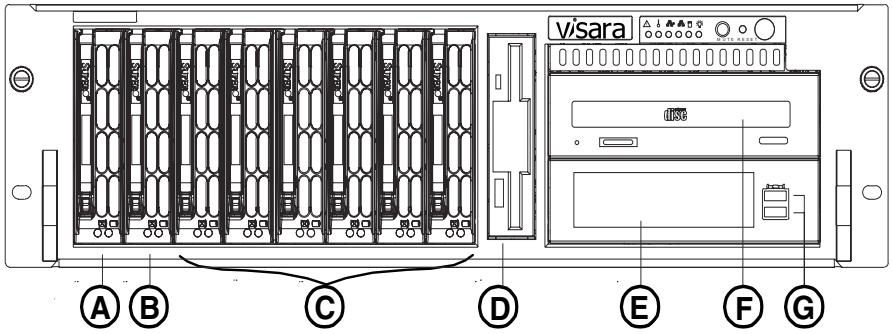
Inspecting the package

Before unpacking the iCON-XT, inspect the carton for physical damage. If the exterior package is damaged, contact your local sales office or distributor. Also contact the carrier to request examination of the damage. The carrier is required to complete and sign a damage report form. If the package is not damaged, remove the package contents which includes all the items shown below. Check to make sure your unit is complete. Contact your Sales person immediately if anything is missing.



Product Overview

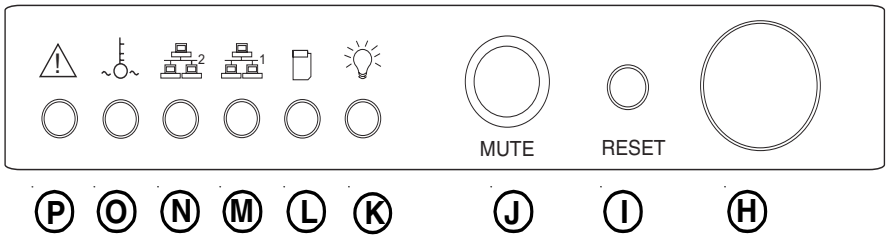
Chassis Front View and the Front Control Panel



Chassis Front Panel

Front Panel I/O Device Definitions

A. RAID A (master)
B. RAID B (mirror)
C. Spare Drive Trays (unused)
D. Floppy Drive
E. 5.25" Drive Bays (2)
F. CD-R/W Drive
G. USB Ports (2)



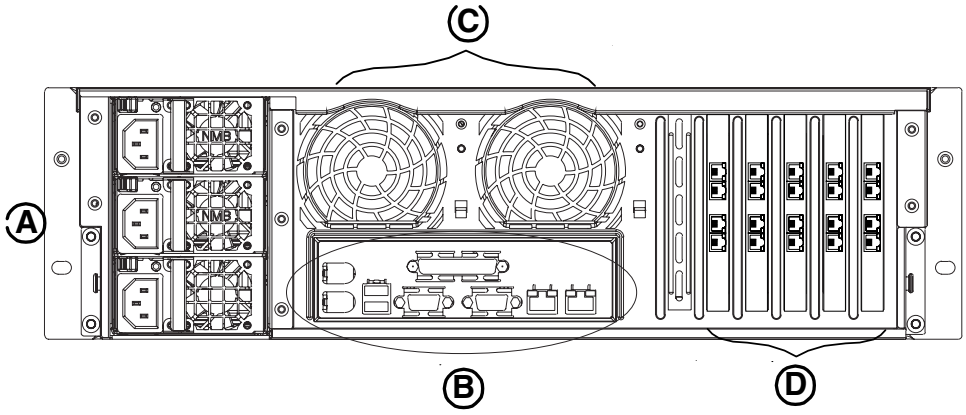
LED Panel

LED Button Definitions

H. Power Button
I. Reset
J. Alarm Mute
K. Power Indicator
L. HDD Activity
M. LAN1
N. LAN2
O. Overheat
P. System Alert/Power Failure

Note: Silence the alarm by pressing the Alarm Mute button. Once the alarm is disabled, press the Mute button again to reactivate the alarm function.

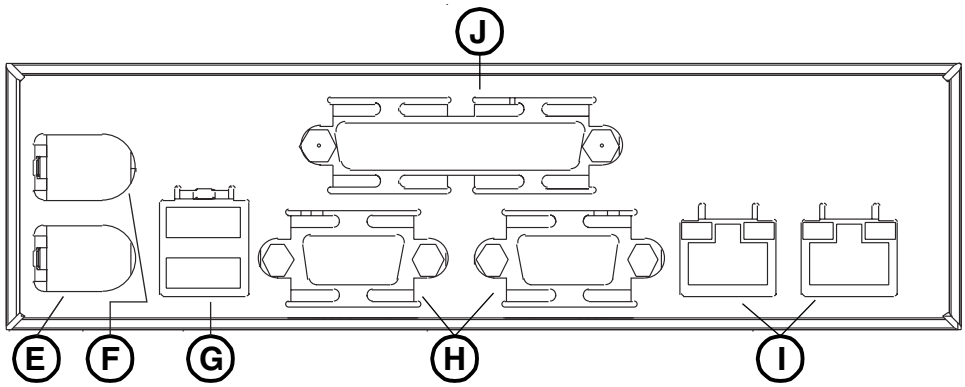
Chassis Rear View and the Back Panel



Chassis Rear View

Back Panel Devices

A. Power Supply Modules (3) (760W total)
B. Back Panel I/O Ports
C. Rear System Fan Slots (2)
D. Twinax adapters



I/O Back Panel

Back Panel I/O Port Definitions

E. Keyboard
F. Mouse
G. USB Ports
H. COM/Video Ports
I. LAN1 & LAN2
J. Parallel Port

Note: The actual I/O Configuration of your system might be different from the one shown above.

Setting up the iCON-XT

Initial setup of the iCON-XT involves the following:

1. Cable the unit (power, Ethernet, Twinax). (see **Connecting the iCON-XT**, below.)
2. Edit the twincon.ini file on the included floppy disk. (see **Editing the twincon.ini file** in Chapter 3.)
3. Power up the unit with the floppy in the drive.
4. Using any web browser, connect to the iCON-XT to complete the setup. The management password is case sensitive, and is set at the factory to **admin**.
   a. Name the Unit, and create or join an iCON domain.
   b. Name all the Twinax connections and define who can use them.
   c. Create a list of users and their privileges (or import them from another iCON in the domain).

Connecting the iCON-XT

CAUTION: Only use the Quad Twinax Adapter (QTA) T-cables that were packaged with the unit!

Connecting the power

Plug one end of each of the power cables into the AC connectors on the back of the server. Plug the other end of each AC power cable into an appropriate AC power source.

Connecting to the 5250 Network

Connect an iCON-XT QTA Twinax port to the host system or to a twinax hub by following these steps with cable lengths as indicated:

	Twinax	Twisted Pair
Maximum length	1500 meters (4920 feet)	277 meters (900 feet)

Twinax cable and twisted-pair cables can be combined. The following formula shows lengths:

(twinax length) + (5 x twisted-pair length) < 1370 meters (4500 feet)

1. Locate the twinax cable extending from the host system or from the closest device on the host system side of the line. Attach the connector at the end of this cable to either socket on the two-socket end of the QTA T-cable.
2. Push the connector into the socket, rotating the connector if necessary to align the key. Turn the retaining ring clockwise until tight.

3. If there are other terminals in the daisy chain, connect the second cable from the next terminal to the unused socket of the two-socket end of the T-cable before attaching the T-cable to the back of the logic element.
4. Align the RJ-45 connector end of the T-cable with the appropriate RJ-45 connector on the back of the Quad Twinax Card (QTA).
5. Make sure the twinax line is terminated properly. The last T-connector should have one input open. If the last device is a Visara device, it must have a T-connector. If the last device is not a Visara device, ensure that it is terminated correctly according to the manufacturer's instructions.

Note: When one connector of the two-socket end of twinax cable is unattached, the cable is self-terminating. When the single end of the connector cable is unattached, the cable is in Pass Through mode, and signals continue on to the next connected device. Never attach the twinax cable directly to the logic element.

Connecting to an Ethernet LAN

To connect the iCON-XT to an Ethernet LAN, prepare the Category 5 or unshielded twisted-pair cables according to the following table:

	Category 3, 4, or 5	ANSI / IEEE Standard
Maximum Length	100 meters (328.084 feet)	802.3I - 1990 Section 14 or greater
Minimum Length	1.0 meter (3.281 feet)	

1. Locate the Category 5 UTP Local Area Network (LAN) cable.
2. Plug the LAN cable into one of the two RJ45 LAN connectors on the back of the server. (See the I/O Backpanel illustration.)

Powering Up

After the iCON-XT has been properly installed and connected, the IP addresses must be configured before it is ready to operate online. Refer to Chapter 3 and modify or create a floppy disk with a twincon.ini file containing the correct IP addresses

1. Install the floppy disk containing the twincon.ini file into the floppy disk drive.
2. Depress the Power-On/Off button to turn on power.
3. If the Power-On indicator does not light, check the power and make sure the unit is completely plugged in.
4. The unit should boot and save the twincon.ini file to the hard drive. The IP addresses have now been changed. The iCON-XT may be accessed via a web browser using the assigned IP address.

Powering Down

1. Save all work in process and close any open sessions.
2. Click **Start**, **Shut Down**. Select either **Shutdown**, **Reboot**, or **Restart Window Manager**.

Troubleshooting

If you are experiencing trouble with the unit, refer to the following. If the problem persists, please contact your local Sales Representative.

Problem: Terminal cannot be turned on.

- Check that all I/O and power connectors are correctly and securely connected as described in the "Setting up the iCON-XT" section.
- Made sure the pins of the connectors are not crooked or broken.

Problem: LAN function cannot be started.

- Ensure that the cable is securely connected to the network RJ-45 connector, and that the other end of the cable is also securely connected to its correct device.
- Contact your system administrator.

Problem: Network server cannot be logged on.

- Ensure that the related network setting is correct.
- Contact your system administrator.

Specifications

General Specifications

- 3.0+Ghz Intel Xeon™ Processor with EM64T and 1MB L2 Integrated Advanced Transfer Cache
- Redundant Hot Swappable Power Supply, supports “Dual Power Cord Initiative”
- SATA Hot-swappable Fixed Drive
- Slim 24x CD-R/W drive
- 3.5” Floppy Drive, 1.44MB
- 5x Full-height, Full-length PCI Expansion Slots
- System Cooling:
  - 4 x 9cm Hot-swappable Fan
  - 2 x 8cm Rear-exhaust Fan
- 2 x 10BASE-T/100BASE-TX/1000BASE-T, RJ45
- Up to five PCI Quad Twinax Adapters (QTA)

Physical Characteristics

- Base unit:
  - Height: 5.2" (132mm)
  - Width: 17.7" (450mm)
  - Depth: 25.5" (647mm)

Regulatory Compliance (Power Supply)

- Power Supply Safety/EMC
  - USA - UL listed, FCC
  - Canada - CUL listed
  - Germany - TUV Certified
  - Europe/CE Mark
  - EN 60950/IEC 60950-Compliant

Safety, Power, and Environmental Requirements

The iCON-XT was designed for the user to install into a safe environment. No special tools are required.

Meeting environmental requirements

The following table lists the environmental requirements of the iCON-XT:

Operating Temperature Range	50° to 95°F (10° to 35° C)
Relative Humidity	8% to 90% non-condensing

The Power Supply specifications of the server

Power Supply Specification	760W Series
Part #	53932-001
Rated AC input voltage	100-240V AC
Rated input frequency	50-60 Hz
Rated input current	14A (115V) 7A (230V)
Rated output power	760W
Maximum rated BTU	4350 BTUs/Hr
Nominal DC output:	
+3.3V	36A
+5V	36A
+12V	50A combined
-5V	n/a
-12V	1A
+5Vstandby	3.5A

Power cable requirements

For units operating at 100-120V:

The power cable required for domestic units is a UL listed, CSA certified 18/3 AWG, type SVT or SJT cable (9-foot maximum):

- Terminated on one end by a 125V, 15A grounding type attachment connector.
- Terminated at the other end by a 125V, 15A parallel blade, grounding type attachment plug.

For units operating at 200-240V:

The three power cables required for domestic units are UL listed, CSA certified, 18/3 AWG, type SVT or SJT cable (9-foot maximum):

- Terminated on one end by a 250V, 15A grounding type attachment connector
- Terminated at the other end by a 250V, 15A tandem blade, grounding type attachment plug.

For international units:

The power cable required is an 18/3 AWG, type SJT cable (9-foot maximum):

- Terminated on one end by a 250V, 15A grounding type attachment plug body
- Terminated at the other end by a 250V, 15A grounding type cord connector.

The cord set is marked HAR to signify appropriate safety approvals. The socket outlet must be nearby and easily accessible, per IEC 950 Sec. 1.7.2.

Power outlet requirements

The installation site must provide a properly wired and grounded power outlet. Circuits connected to air conditioners and devices that generate significant transient electrical noise should be avoided.

Electrical interference and atmospheric considerations

Electrostatic discharge in the vicinity of the unit should be minimized by avoiding high resistance floor material and carpeting that does not have anti-static properties, by avoiding the use of plastic seats and covers, and by avoiding low humidity levels. The unit should be located away from areas that generate electromagnetic interference (for example, transformers, power distribution panels, welding equipment, motors, and transmitters). Do not put the unit next to fluorescent lights. The iCON-XT should not be installed where the atmosphere contains corrosive elements that can damage the unit.

Do not run the power cable or signal cables in areas that produce electromagnetic interference (for example, near transformers, switching equipment, welding equipment, power distribution panels, and under carpets where vacuum cleaning is done). Also, do not roll heavy equipment over the cable.

Chapter 2. User Interface

Note: This section describes the user interface when a keyboard, monitor and mouse are attached. All of the configuration and management functions can be accessed remotely using a web browser.

Using the iCON-XT

This section introduces the new operating environment of the iCON-XT. It explains how to do most tasks and provides tips for getting the most out of the iCON-XT.

If you have used windowing systems before, the “look and feel” will seem quite natural. If not, the intuitive interface is easy to learn and use.

What should I do first?

First, read through the next section - all the basics about using the mouse and working with windows are explained, and some handy keyboard shortcuts are included. After reading this section, familiarize yourself with the display’s workspace. Try starting an application from the start menu - the Browser is a good place to start.

How to start the iCON-XT

The system has been set up to start automatically at power-up. Your user ID and/or password may be required in the iCON-XT login dialog box.

A typical workspace

After the iCON-XT has started, it will display a workspace, an area in which you can run emulators and display windows. Here is a typical workspace, with some sample applications:

At the very bottom of the screen, the *Taskbar* shows at a glance all the applications running on your desktop. The taskbar allows quick switching from one application to another. To learn how to use the Taskbar, see *Using the Taskbar* in this section.

Using the mouse

Two common mouse operations are:

- **Clicking** – Pressing and releasing a mouse button.
- **Dragging** – Holding down a mouse button, moving the mouse, and then releasing the button.

Note: When the word "click" or "drag" is used in this documentation, and no mouse button is specified, use the LEFT mouse button. When the right button should be used you will be explicitly instructed to do so.

Use the *right* mouse button to bring up a context-sensitive menu in most applications.

Pointers

As the mouse is moved, the pointer sometimes changes to provide feedback. Here are the pointers most often seen:

Basic pointer - point to objects to be selected or to indicate where the cursor should be positioned.

Hourglass - Indicates that an operation is in process and must finish before data entry can be resumed.

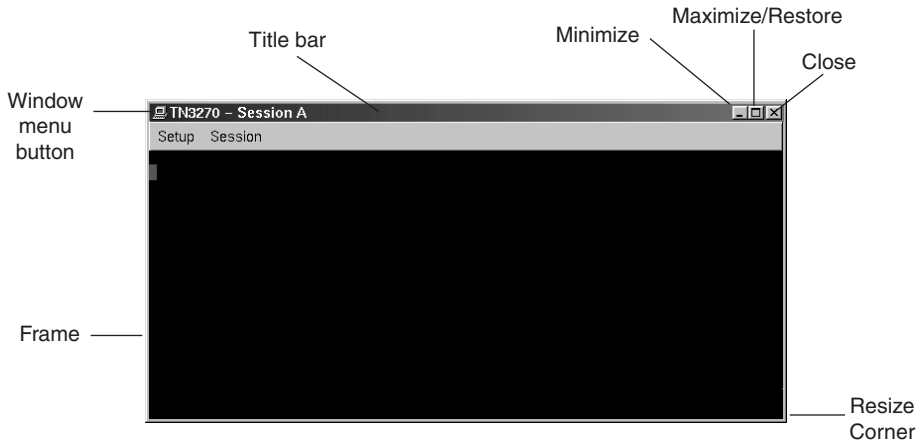
Resize pointer - appears when the pointer passes over a window frame; the two arrows indicate the direction the window can be resized.

I-beam pointer - appears in text-entry fields to indicate that the application is ready to accept keyboard input.

No-input pointer - Indicates the window is not accepting input.

Anatomy of a window

Here is a typical iCON-XT application window:



Most windows include these elements:

- **Window menu button** – Provides modification tools for the window (Restore, Move, Resize, Minimize, Maximize and Close).
- **Minimize button** – Reduce the window to an application button in the Taskbar. To bring the window back up, click the application button on the Taskbar.
- **Maximize/Restore button** – Expand the window to fill the current workspace, or restore it to its previous size after maximizing.
- **Title bar** – Displays the name of the application. The title bar is also where the mouse pointer should be positioned in order to move the window.
- **Frame** – Changes color to indicate the focus window (that is, the one that's ready for input) on the workspace. The frame is also the area to grab to resize the window.
- **Resize corner** – Allows shrinking or stretching of the window.
- **Close button** – Some applications may use this convenient method of closing the window.

Using the Window Menu

To open an application's Window menu, click on the Window menu button in the window's upper left corner.

The Window menu allows you to:

- **Restore** the window's size (after maximizing or minimizing it).
- **Move** the window – the window will track the mouse pointer until the mouse button is clicked.
- **Resize** the window – as the pointer is moved outside the frame, an outline will track it until the mouse button is clicked.
- **Minimize** the window – reduces the window to an application button in the Taskbar. To bring the window back up, just click on the button in the Taskbar.

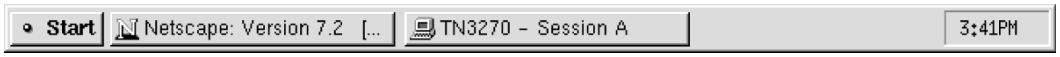
- **Maximize** the window – expands the window to fill the current workspace.
- **Close** – closes the application. An application can also be closed by *double-clicking* on the menu button.

CAUTION: Selecting the **Close** item may immediately terminate the application running in that window ***without*** prompting you to confirm. Always remember to save your work before you click on **Close**!

Note: Some tabs or tool bar icons may be subdued or "grayed out"; these tasks are not accessible at this time.

Using the Taskbar

The Taskbar provides a quick and easy way to switch from one application to another and to restore applications to their normal size on the workspace.



The Taskbar includes the following:

- Application list button - Start displays a menu of applications made available for your use by your system administrator.
- A label button for each application that is running. The label will appear whether the application is visible on the screen or in the minimized mode.

To start-up an available application:

1. Click the Start button. The menu of applications will appear.
2. Select the application you wish to work with.

To switch to any running application, click on the application's button on the Taskbar. The application's window will be restored if minimized, brought to the front, and will become the focus window.

Note: To access the start menu while in full-screen mode, hold the **Ctrl** key while pressing the **Esc** key. Press **Alt-tab** or **Alt-Shift-Tab** to cycle through applications, pressing the **tab** key repeatedly until the application you wish to bring to the front is displayed.

Chapter 3. Configuration

Server Configuration

The factory default IP address of the iCON-XT is 192.168.0.1. You may use any web browser to connect to this address to complete the server configuration.

If you would like to change this default value, the twincon.ini file must be edited.

Editing the twincon.ini file

Using a text editor such as Window's® Wordpad, open the twincon.ini file on the included diskette. Change the IP addresses to the desired values (see example below). If the original diskette cannot be located, the file may be created with the entries as shown below.

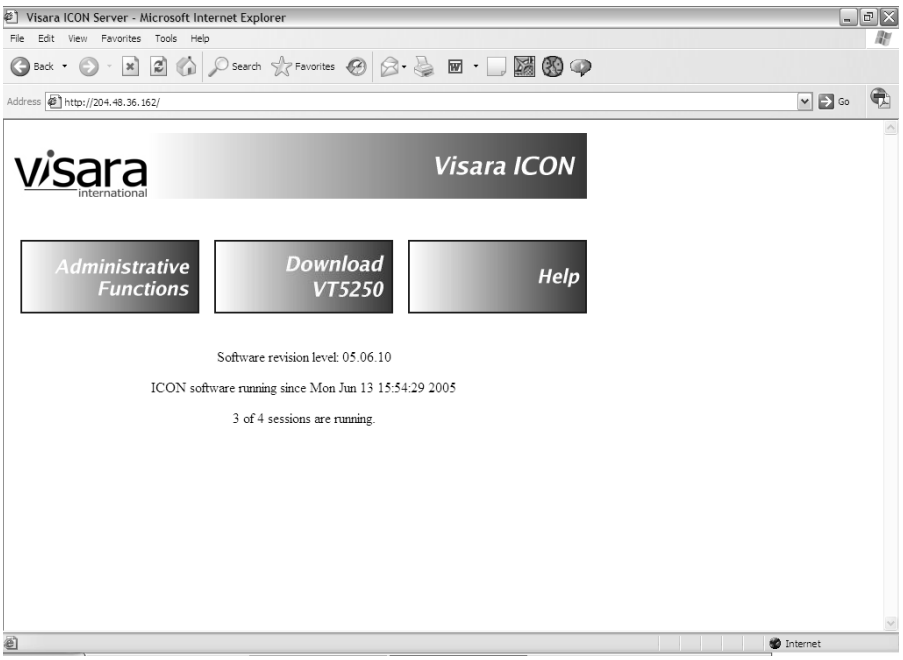
Note: No whitespace (spaces or tabs) is allowed in the entries in this file. The data in this file is not case sensitive.

```
[Network]
IP=192.168.0.1
NetMask=255.255.255.0
DefaultGateway=204.48.36.254
```

Save the file, and insert the diskette into the floppy drive on the iCON-XT. Power on the unit. As the iCON-XT boots, the file will be saved onto the hard drive. The settings in the file will become effective immediately.

Note: The diskette is not required for future reboots and should be removed after the initial load.

Warning - If the diskette is in the drive when the iCON-XT is powered up in the future, the settings contained in its twincon.ini file will override any settings on the hard drive that have been changed or defined with a web browser.



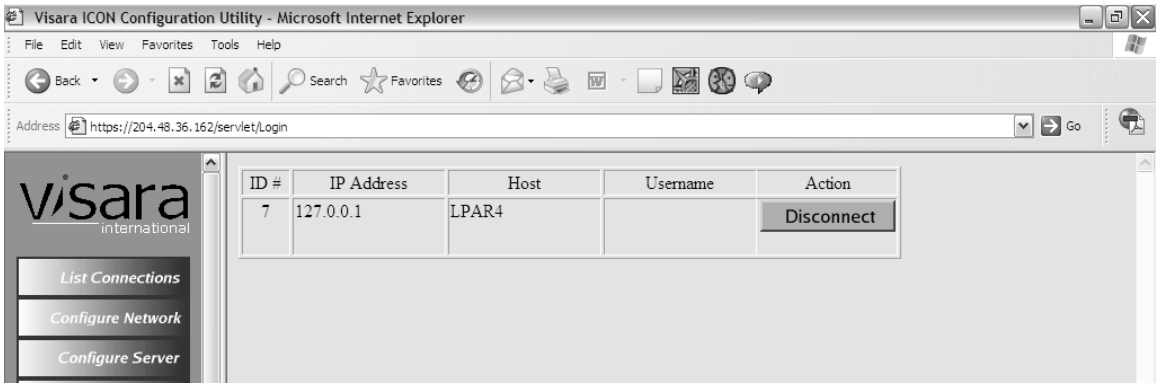
After connecting to the iCON, click **Administrative Functions**. You will be prompted for the administrator password (the default password is **admin**, and is case sensitive).

Note: The administrator password should be changed as soon as possible to protect the iCON configuration.

The pages that follow describe the configuration screens that may be accessed from the web browser.

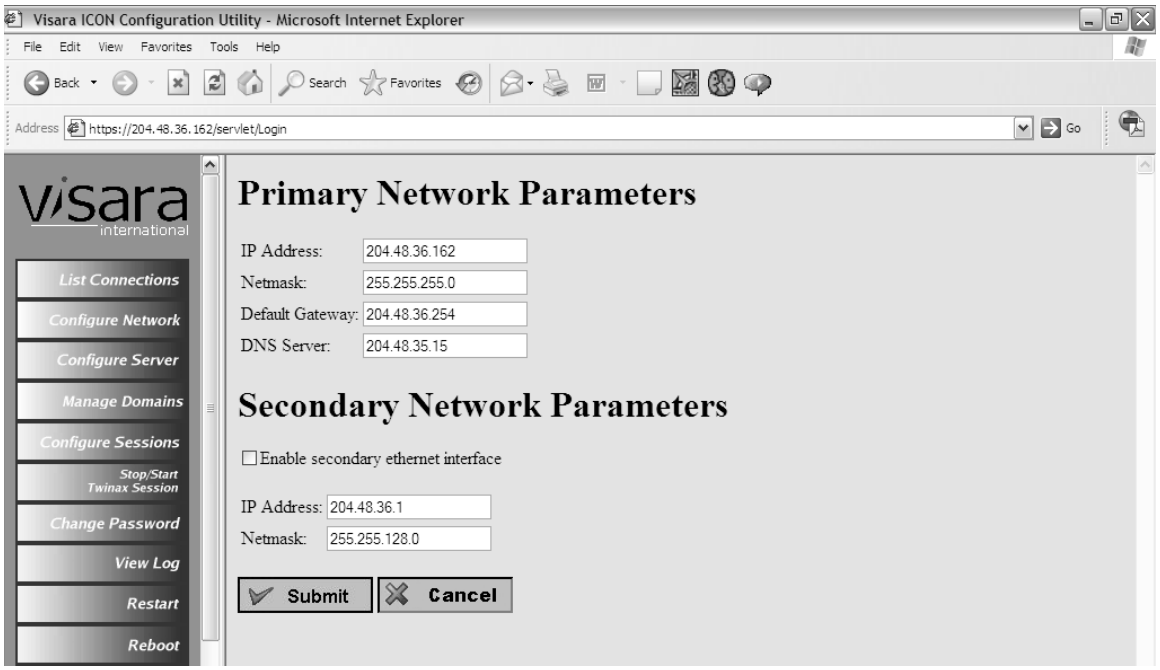
List Connections

The List Connections page will show the IP addresses of all clients that are connected to the server and the status of their connection.



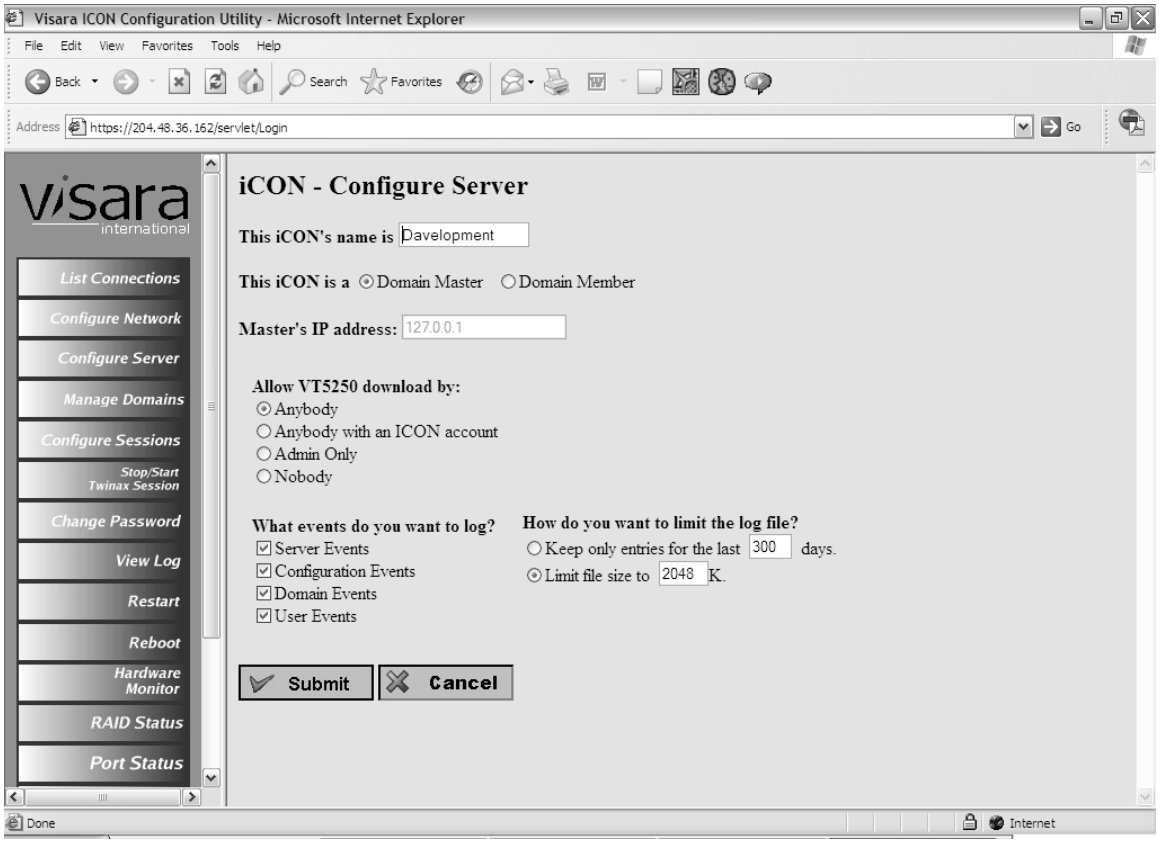
- **ID#** - An index number for this connection.
- **IP Address** - TCP/IP address of the client.
- **Host** - The name of the session associated with a twinax port.
- **Username -** The name of the connected user.
- **Action** - Click the **Disconnect** button to terminate that user's session. You will be asked to confirm the action before disconnecting the client.

Configure Network



Enter the IP Address, Netmask, and Default Gateway of the primary network. Click **Submit**. Secondary Network Parameters should be entered if the second ethernet interface is to be used. There can only be one default gateway, and it is always on the primary interface.

Configure Server

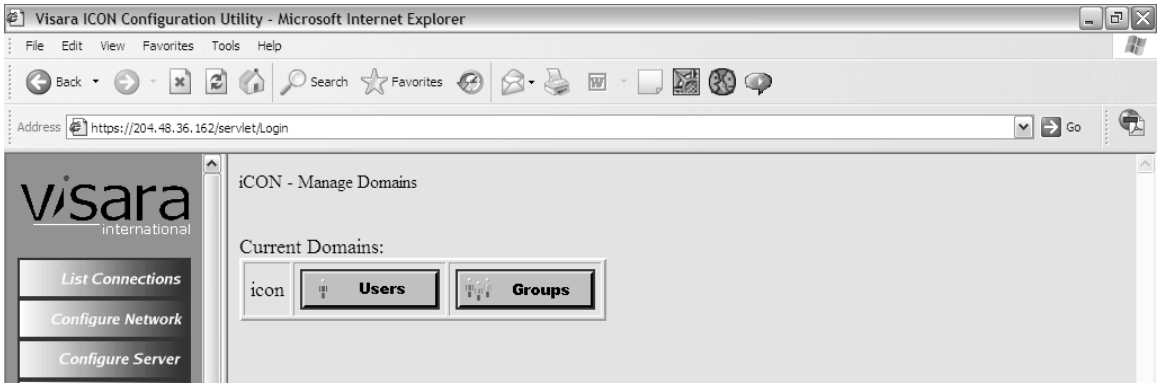


Enter a name for this iCON. A unique name will allow the unit to be easily identified within the domain.

Select **Domain Master** or **Domain Member**. If this is a stand-alone server, or a Domain Master, select Domain Master. Otherwise, select Domain Member and enter the IP address of the iCON server where the users and groups will be administered. (The IP address field will not be active if Domain Master is selected.)

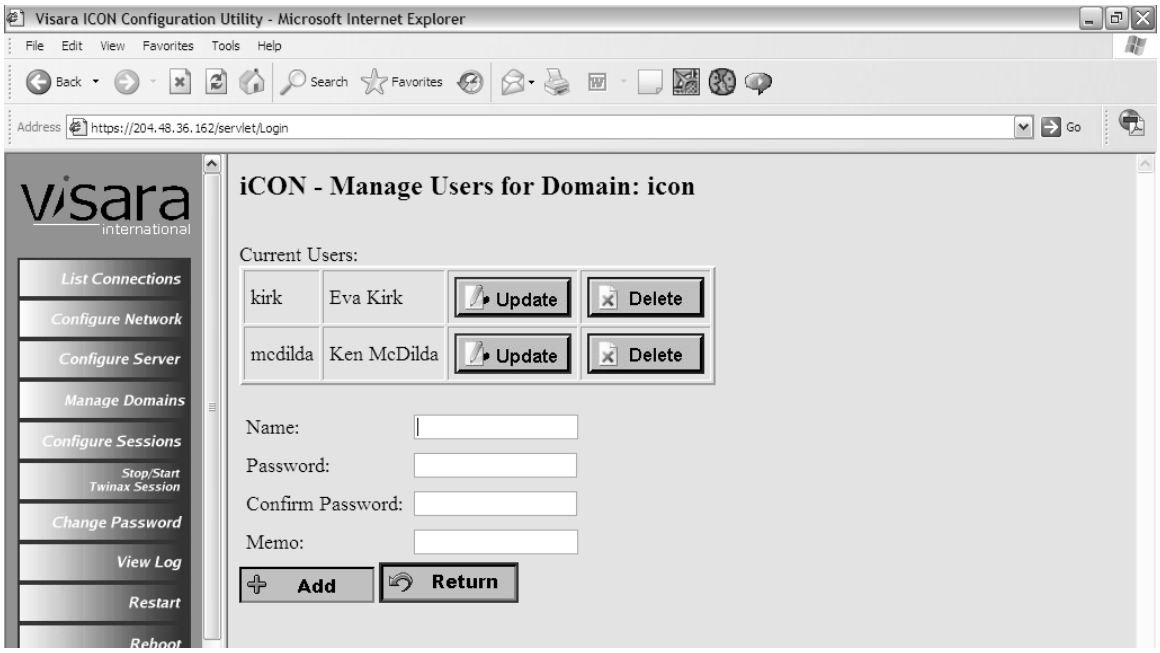
Select who will be allowed to download VT5250 and click **Submit**.

Manage Domains



Click the appropriate button to add **Users** or **Groups** to the domain.

Manage Users for Domain



To add a new user:

1. Enter a unique user name in the **Name** field.
2. Enter the **Password**, and verify the password by entering it again.
3. If desired, more descriptive information such as a complete name may be entered into the **Memo** field.
4. Click **Add**.

To edit a currently existing user's password or memo:

1. Click **Update** beside the desired name in the user list.
2. Enter a new password (and confirm by entering again) or memo. The user name may not be edited.

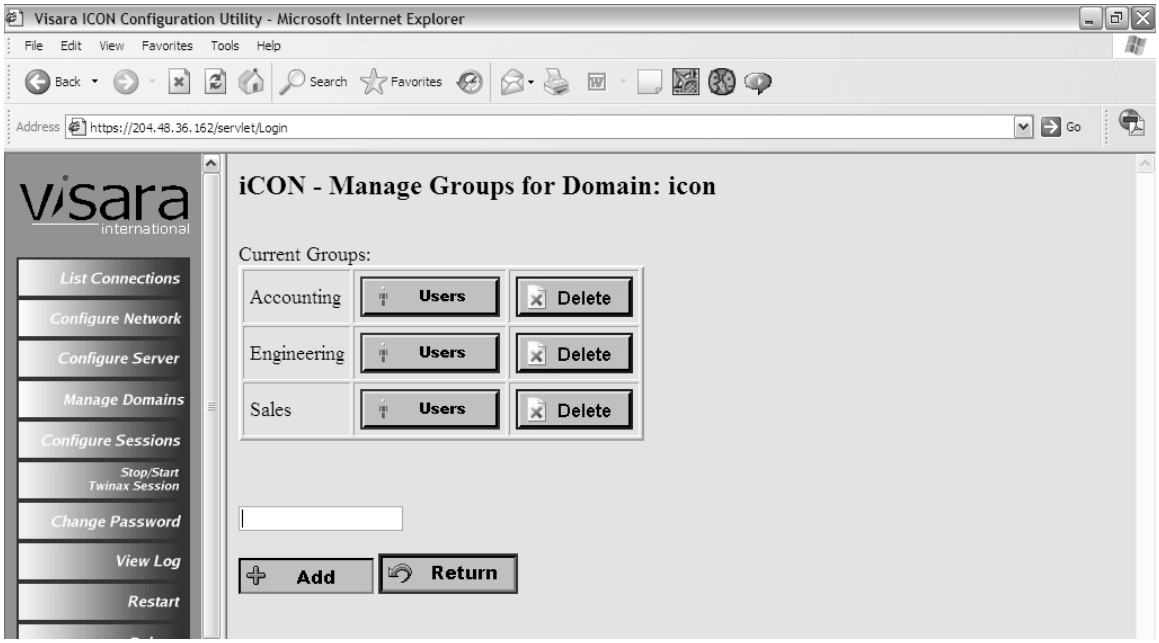
Note: The password of an existing account will not be displayed. The Password and/or Username may be updated by entering a new Password and/or Username.

3. Click **Update**.

To delete an existing user click **Delete** beside the user name in the Current Users list.

Click **Return** to go back to the Manage Domains panel.

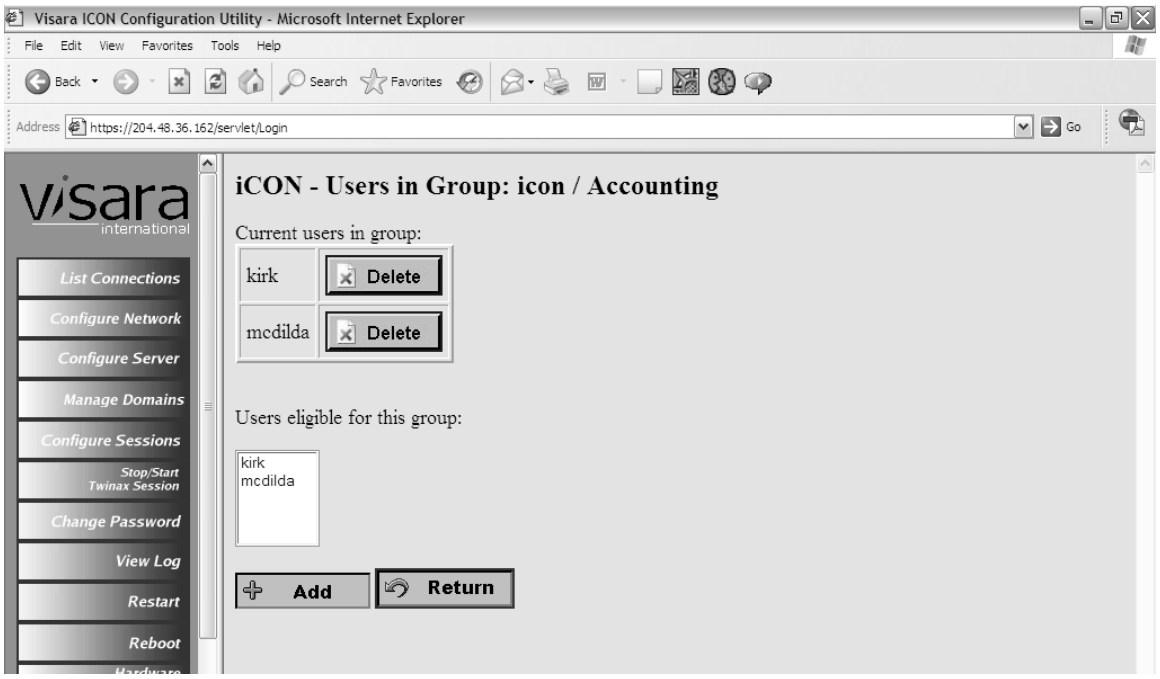
Manage Groups for Domain



To add a new group to the domain enter the group name in the text box and click **Add**. The group name will appear in the *Current Groups* list above the text box.

Once groups are added, users may be added to one or more groups. To add users to a group, click the **Users** button beside the desired group.

Users in Group

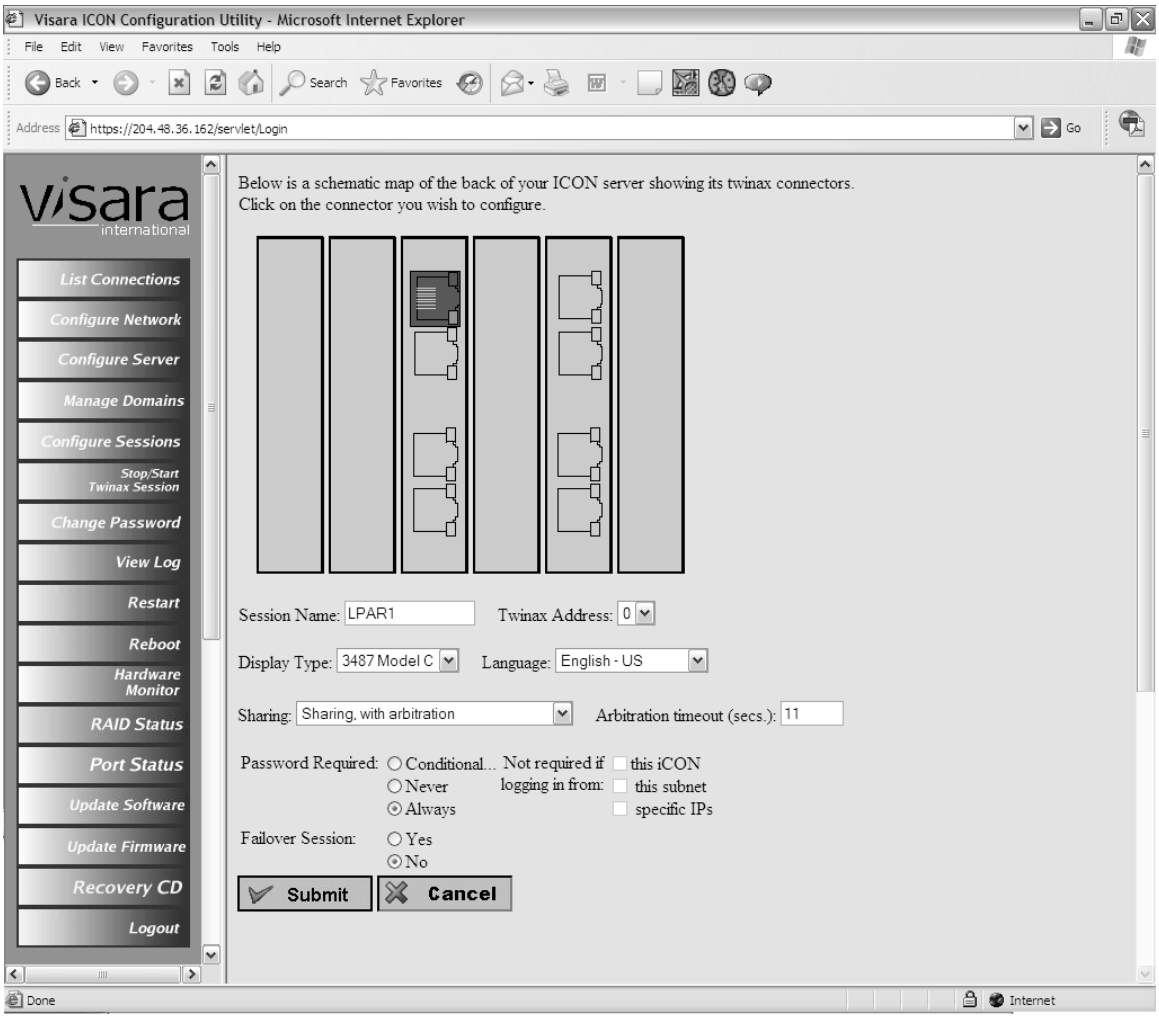


All of the user names that have been added to this domain will appear as *Users eligible for this group*. Any users that have already been added to the group will appear as *Current users in group*.

To add a user to the group, select the user name in the box below *Users eligible for this group* and click **Add**.

Configure Sessions

The Configure Sessions screen shows a map of the twinax connectors on the back of your iCON server. Click on the twinax connector that you would like to configure. A green "led" will flash to indicate the selected port.



- **Session Name** - Enter a unique name for this session.
- **Twinax Address** - Select the twinax address to use for this session, 0 - 6. This address must not be used for more than one session on the same twinax connection.
- **Display Type** - Select the display you wish to emulate.
- **Language** - Select from the following:
  - English - US
  - English - UK
  - Italian
  - French
  - French - Belgian
  - French - Canadian
  - French - Swiss
  - German - Austrian
  - German - Swiss
  - Spanish
  - Swedish

- **Sharing -** Select from the following:
  - **No Sharing:** Once the session is active, it may not be accessed by another user.
  - **Sharing, no arbitration:** The session may be shared by multiple users. With *no arbitration* more than one user may use the keyboard at the same time.
  - **Sharing, with arbitration:** The session may be shared by multiple users. With *arbitration* only one user has control of the keyboard. The arbitration timeout determines how many seconds will lapse between the last keystroke of one user and the time that control of the keyboard is released to others. The keyboard is automatically released 3 seconds after an Enter key.
  - **Sharing, with arbitration, no auto-yield:** Same as *Sharing, with arbitration*, except after an Enter key, the keyboard is released after the configured arbitration timeout.
- **Arbitration Timeout** - The interval, in seconds, that may lapse between the last keystroke of one user and the time that the other user may have keyboard control.
- **Password required** - select **Always**, **Never**, or **Conditional**. If Conditional is chosen, you must select one or more of the conditions that follow in *Password not required if logging in from:*
  - **this iCON -** a user who attempts to log in from this iCON will not be required to enter a password.
  - **this subnet -** a user who attempts to log in from this subnet will not be required to enter a password.
  - **specific IPs -** you may specify particular IP addresses that users may log on from without being required to enter a password. See *Password Exempt Addresses* in this section.
- **Failover Session** - selecting **Yes** here enables the iCON Failover System for this port. The session name and twinax address must match those defined on a port of another iCON unit. Only then should these two ports be connected to the same twinax cable.

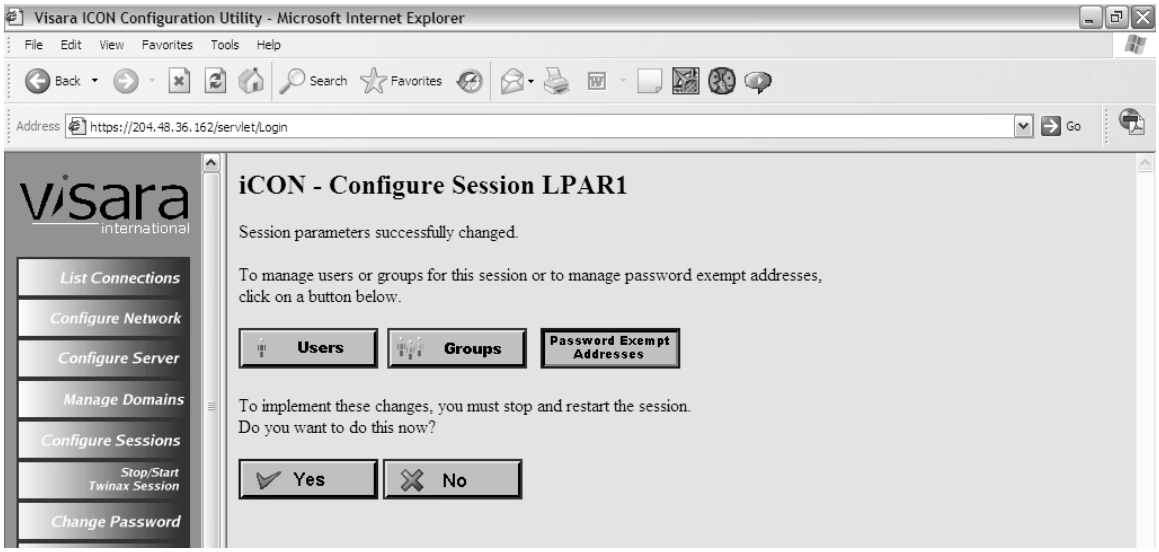
  Select **No** here for a standalone twinax session.

  The iCON Failover System allows you to attach two iCONs to the same twinax cable and configure them both with the same twinax address. Normally this would create a conflict, but with the iCON Failover System enabled, the two units will monitor the address before actively responding to it. This method no only avoids a conflict, but allows one to take the active role of serving the session while the other continues to monitor the twinax traffic, ready to take over the session should the active unit stop responding.

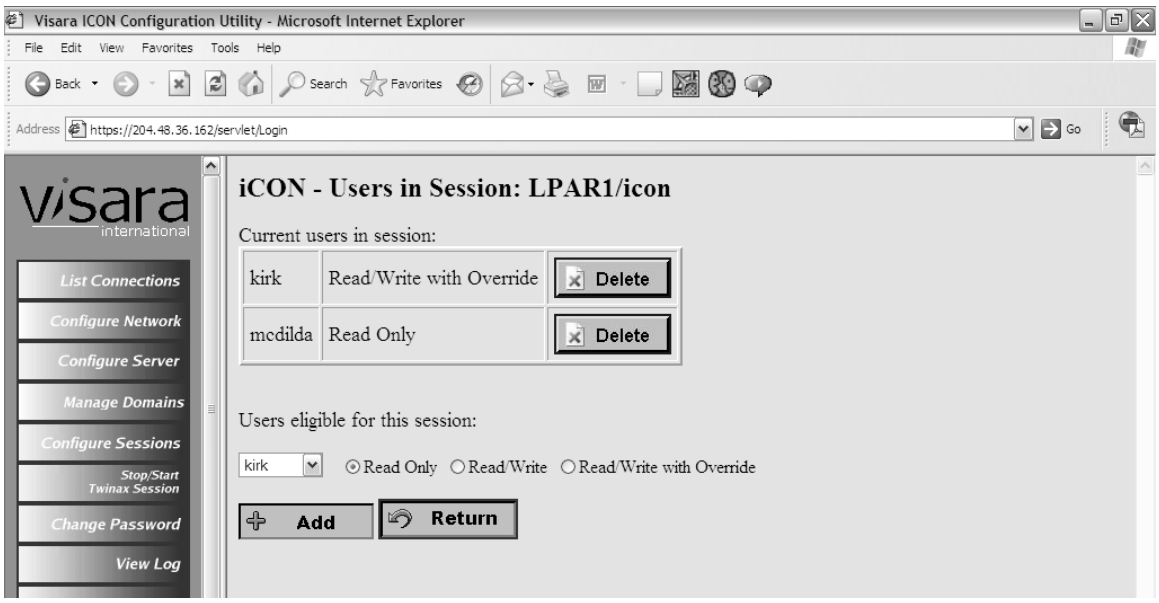
Click **Submit** to continue to the next Session Configuration screen.

Configuration Selection

Click the appropriate button to manage Users, Groups, or Password Exempt IP Addresses.



Users in session

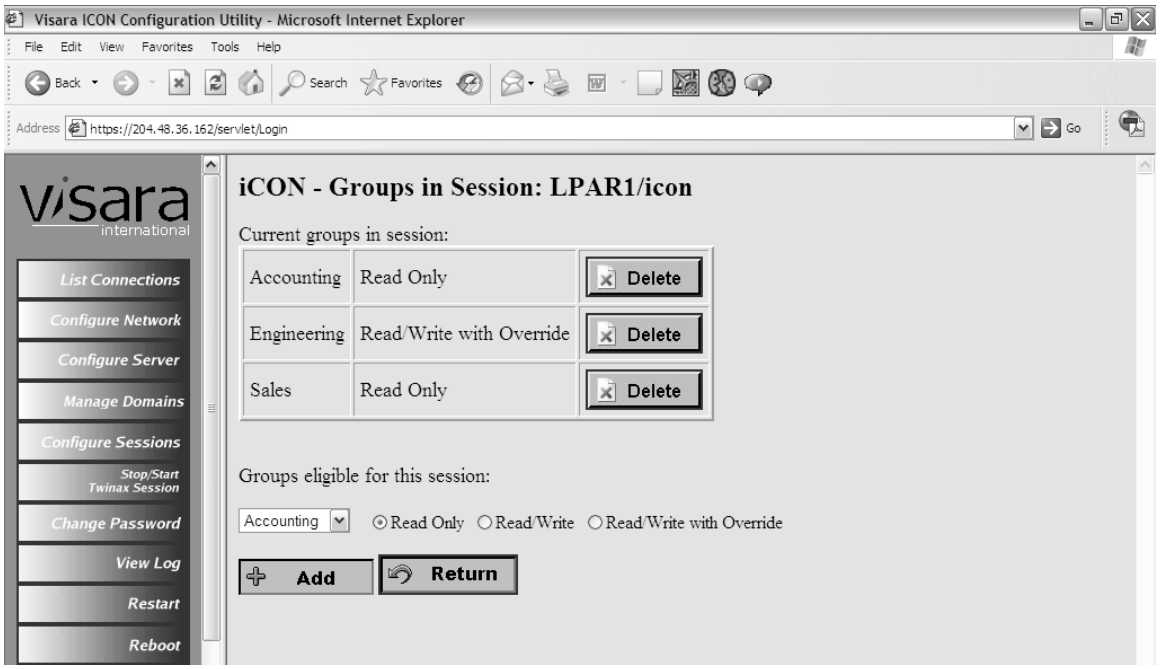


Current users in session: Lists the users who have been given permission to log in to this session and their current access level. Click **Delete** beside a user name to remove that user from the list. The user will remain connected to the current session, but they will not be allowed to log in again once they have logged out of the session.

Users eligible for this session: Lists the users who may be given permission to log in to this session. Select a user (and the desired access level) and click **Add** to give that user permission to log in.

Click **Return** to go back to the previous screen.

Groups in session

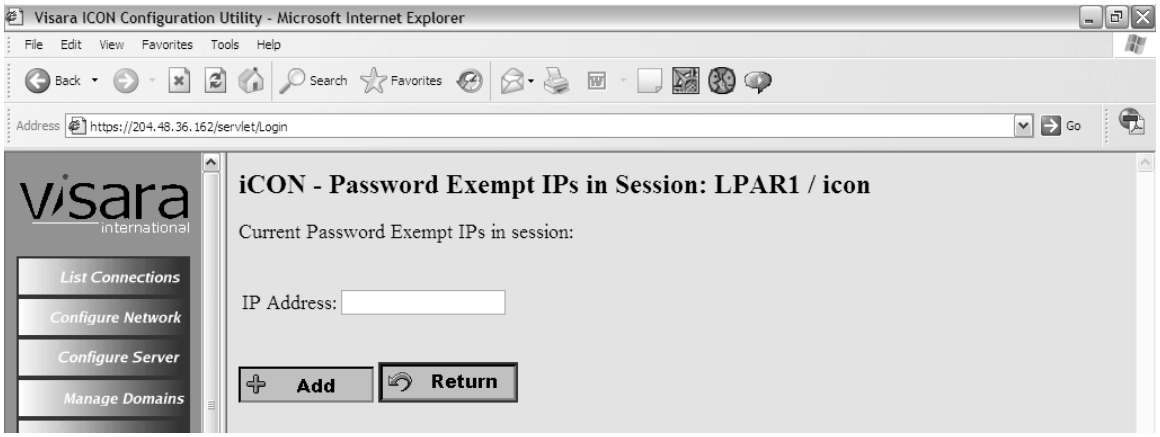


Current groups in session: Lists the groups who have been given permission to log in to this session. Click **Delete** beside a group name to remove that group from this list. The group will remain connected to the current session, but they will not be allowed to log in again once they have logged out of the session.

Groups eligible for this session: Lists the groups who may be given permission to log in to this session. Select a group and click **Add** to add a group.

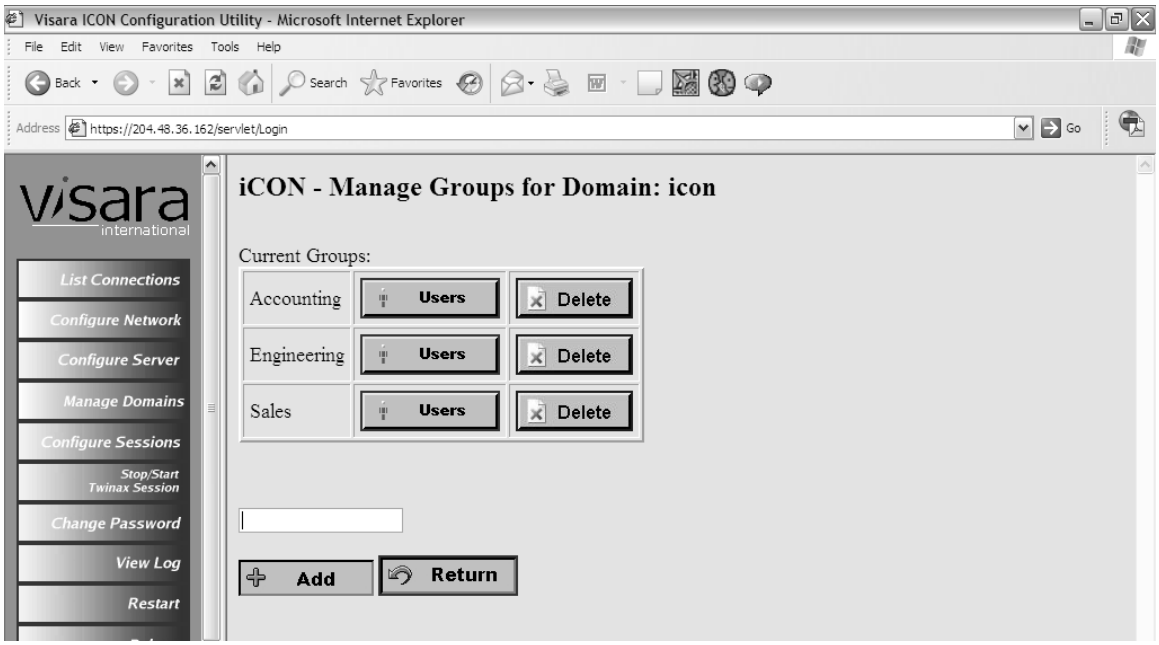
Click **Return** to go back to the previous screen.

Password Exempt Addresses



If *specific IPs* was selected as a condition for requiring a password, the IP addresses to exempt must be entered on this panel. The IP addresses may be entered with a combination of wildcards if desired, such as **204.48.36.***, **204.48.*.***, etc.

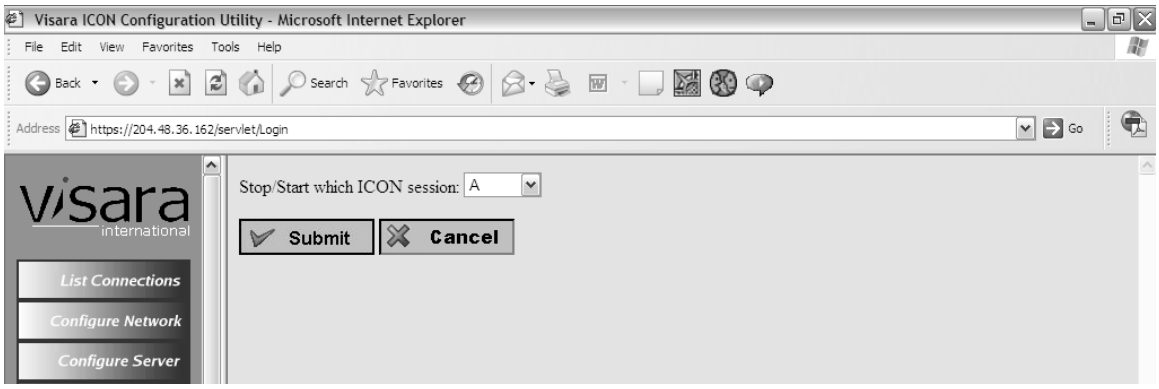
Manage Groups for Domain



To add a new group to the domain enter the group name in the text box and click **Add**. The group name will appear in the *Current Groups* list above the text box.

Once groups are added, users may be added to one or more groups. To add users to a group, click the **Users** button beside the desired group.

Stop/Start Twinax Session

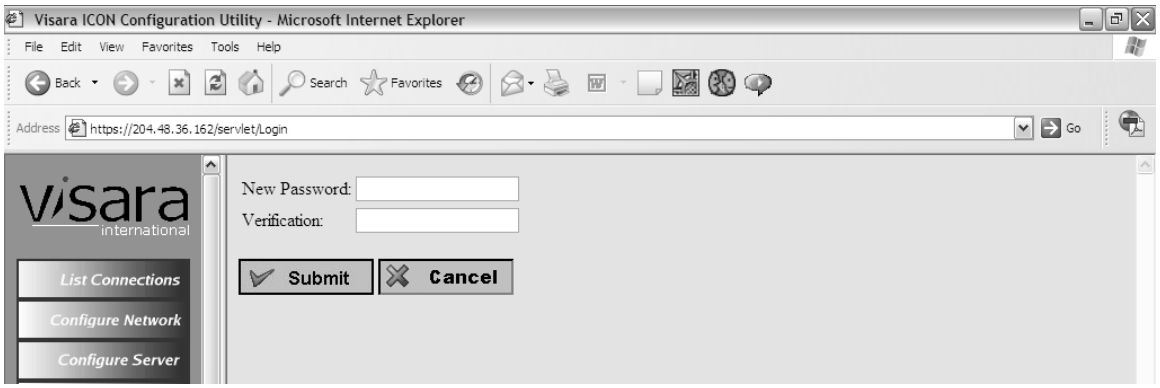


Select the name of the iCON session to stop or start and click **Submit**.

Change Password

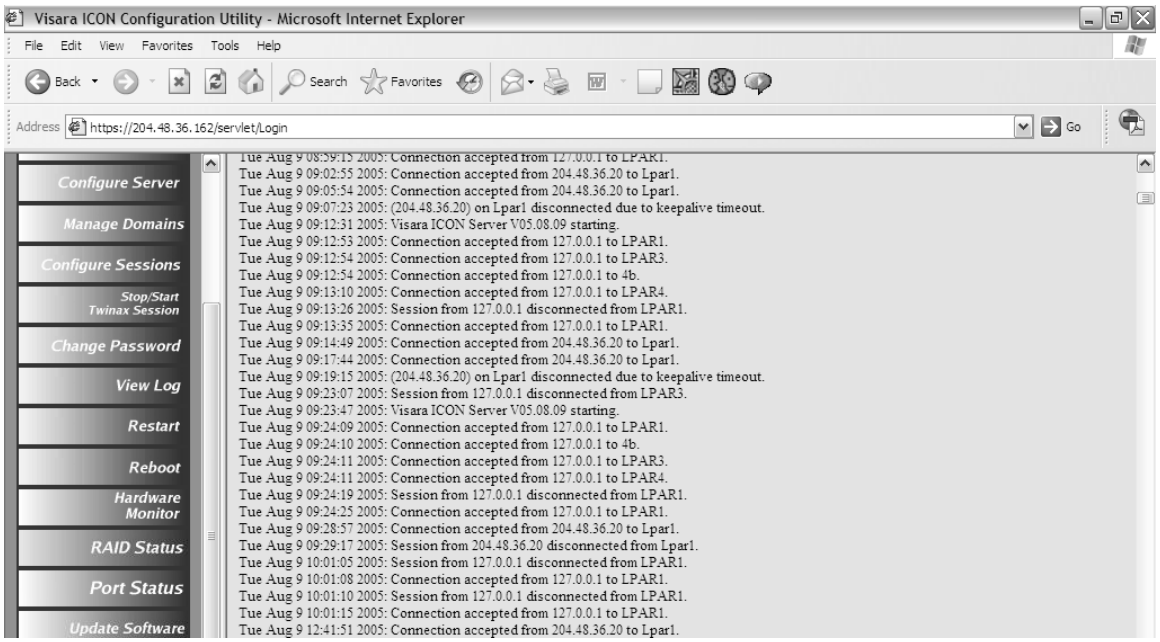
To change the password that will allow access to the configuration screens, enter the new password. Enter it once again as verification, and click **Submit**.

Note: Password is case sensitive.



View Log

To view the log (an example is shown below) click the **View Log** button on the left navigational menu.

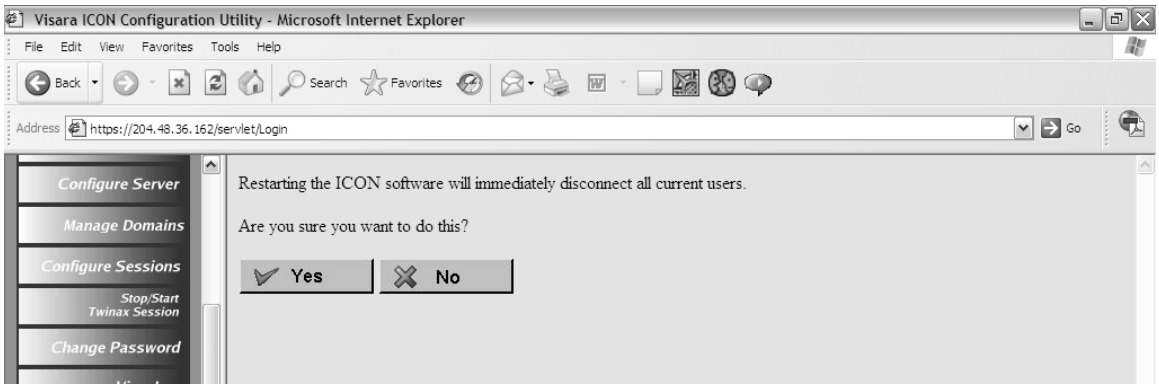


The log shows the oldest entries at the top, with the most recent entries at the bottom.

Restart

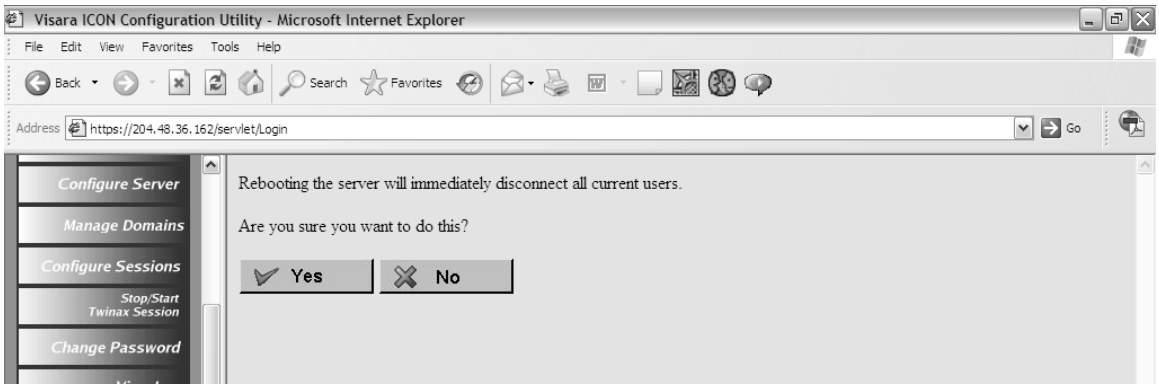
Select to restart the server application. You will be asked to confirm the action. This function takes only a few seconds.

Note: This will disconnect all of the current connections. The administrator interface will remain active.



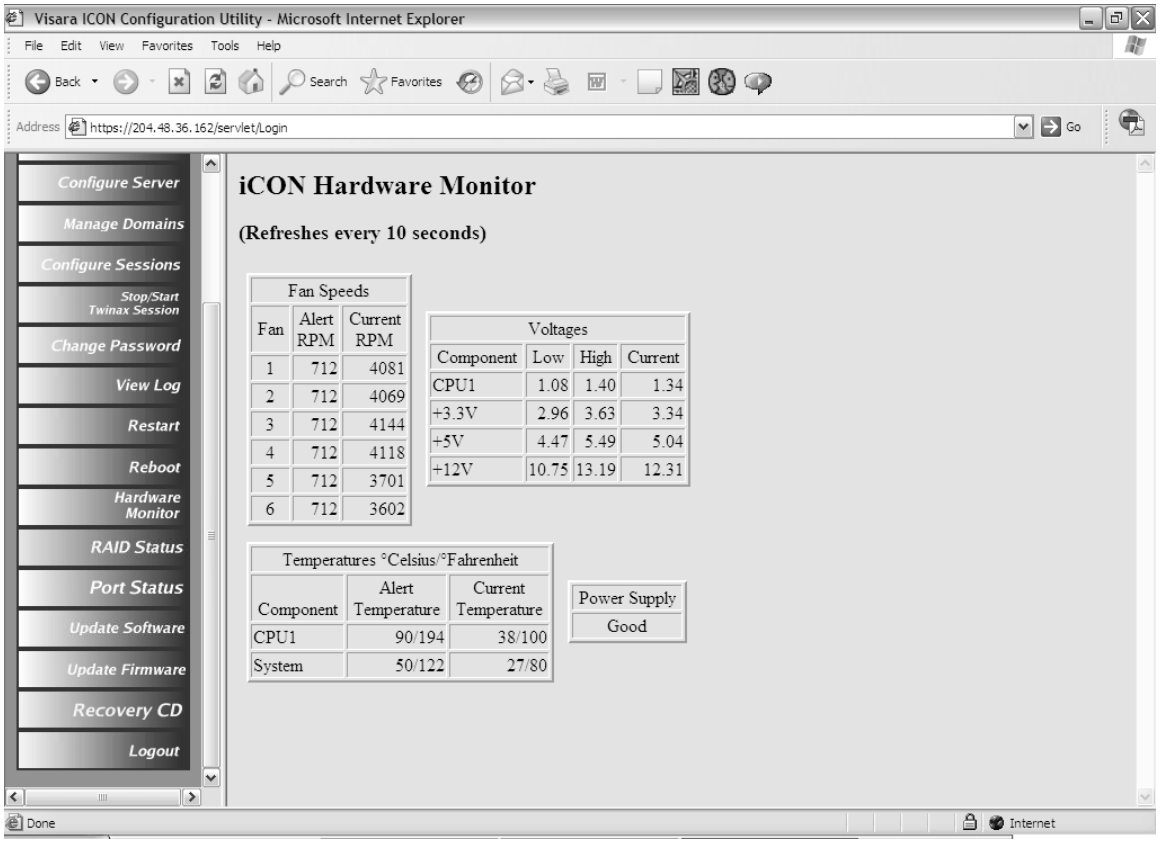
Reboot

Select to reboot the server. You will be asked to confirm the action. Rebooting the server takes about two minutes.



Note: This will disconnect all connections including the administrative interface.

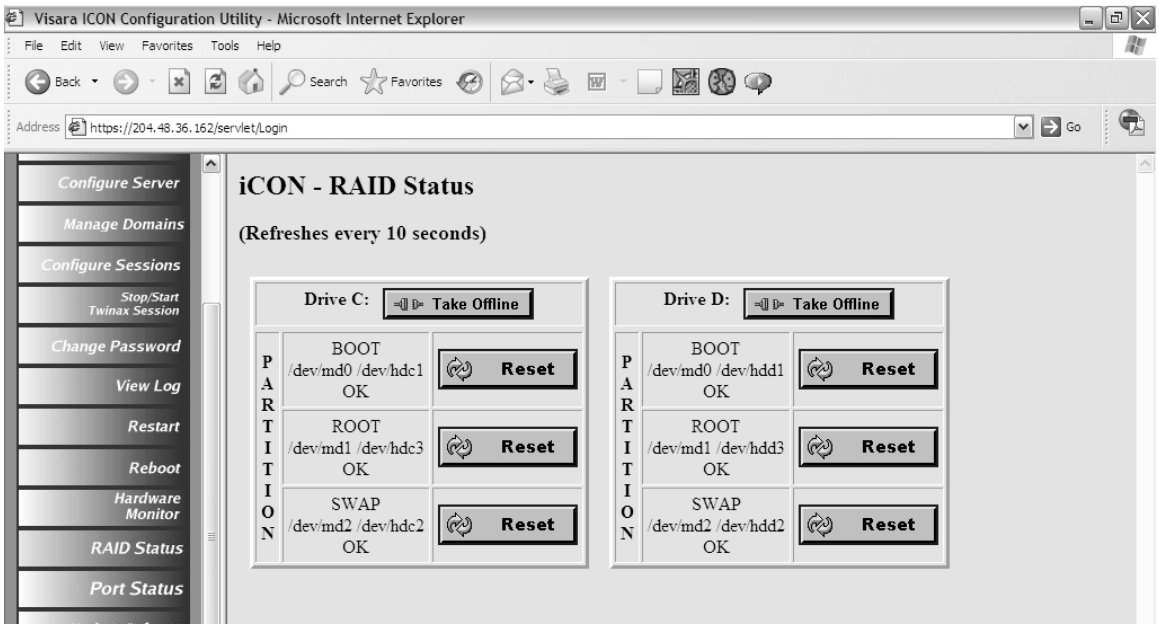
Hardware Monitor



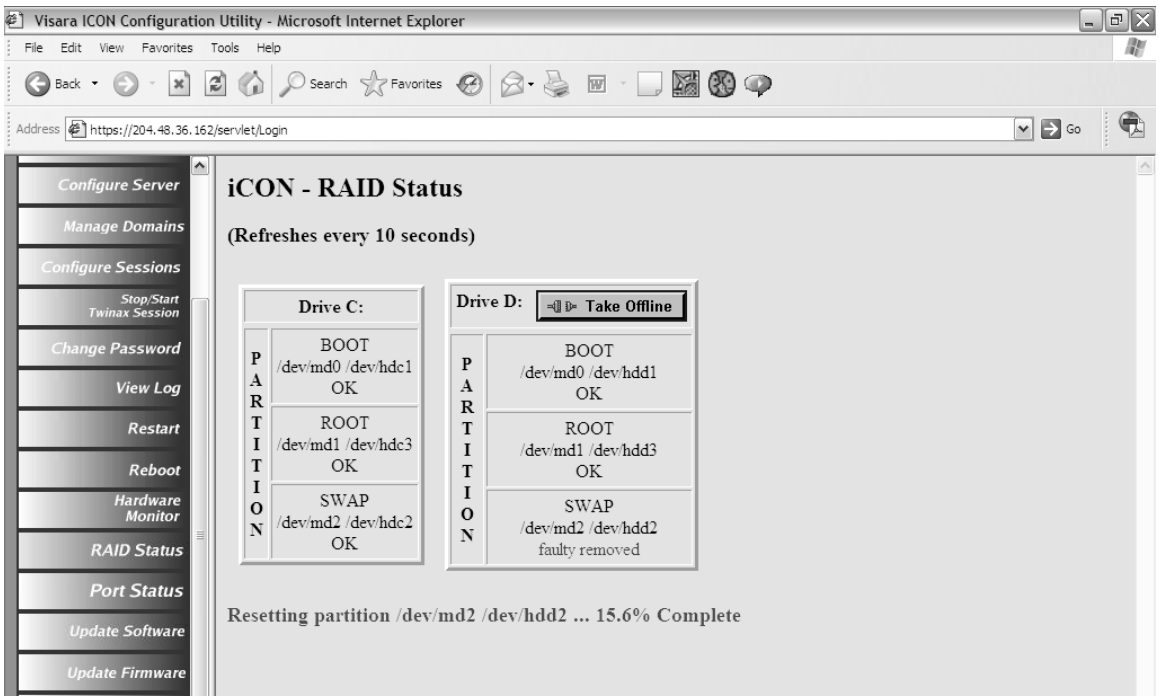
Hardware Monitor will display all available hardware sensors in the iCON. The monitor includes the following sensor types: Fan speed, CPU Voltage, Temperature sensor (both CPU and System) and Power Supply condition.

Raid

The Icon has two mirrored hard drives synchronized using software RAID 1 (data that is written on one drive is automatically also written on the other). There are three partitions on each drive (Boot, Root and Swap). The RAID Status indicates the current state of each partition on each drive. An individual partition can be reset to insure proper operation.

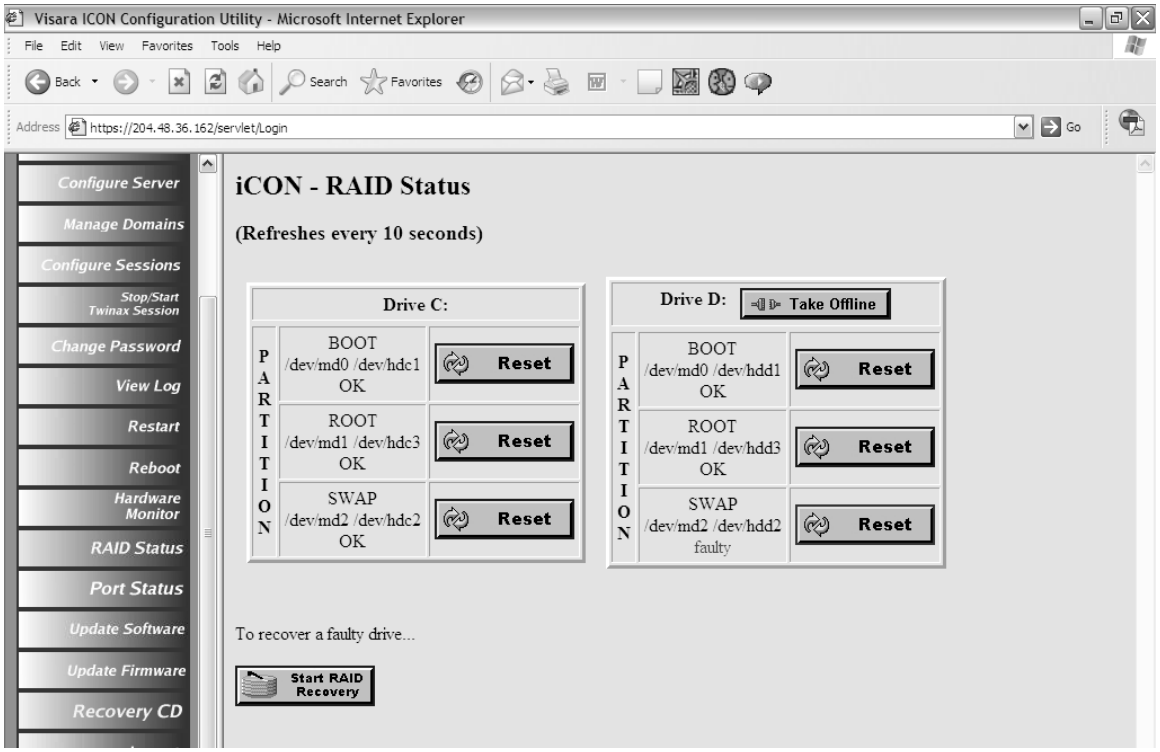


The state can be OK, FAULTY , FAULTY REMOVED, or OFFLINE. If a partition is in one of the last three states, clicking Reset for that partition will start the recovery process for that partition. If the state is OK, clicking Reset will artificially mark it as FAULTY REMOVED, and then begin recovery.



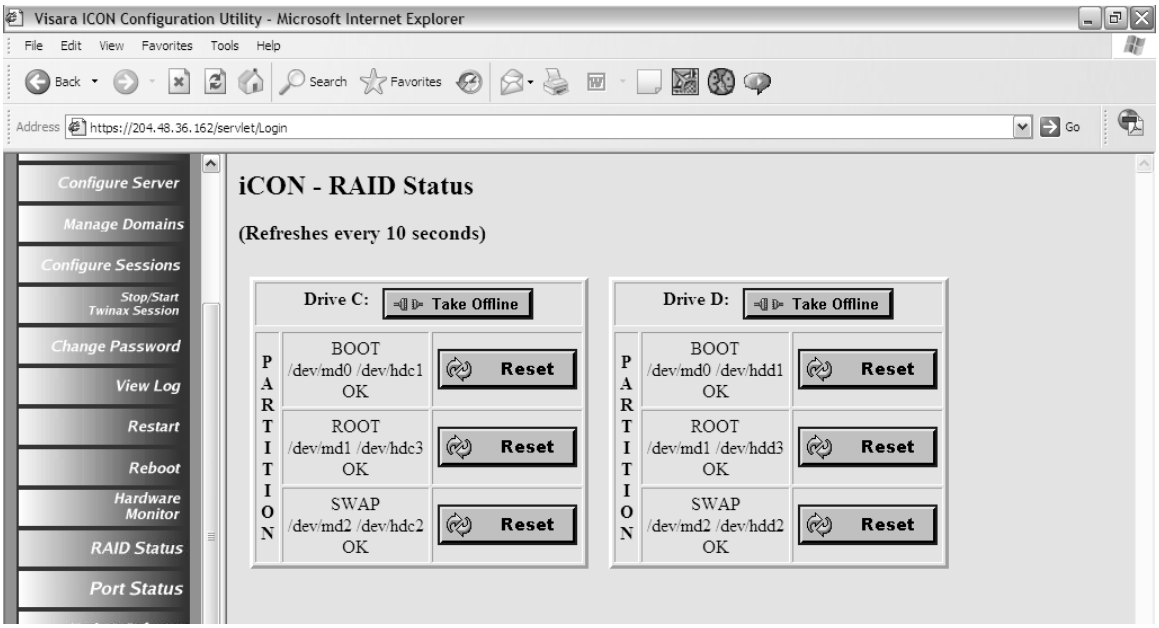
Once started, the recovery process will be monitored, with the screen updated periodically, until recovery is complete.

If one or more partitions are bad on one drive then you can rebuild the whole drive by depressing the RAID Recover Drive button (This button is not displayed if all partitions are OK.) This will reformat the drive , recreate the partitions, resync the partitions from the other drive, and update the boot loader.



Note: DO NOT UNPLUG THE DRIVE WHILE POWERED ON AND RUNNING.

Although the drives are specified as “hot swappable” they should not be removed while in use (online). At the top of each drive there is a button to take the drive offline. Once offline, it can be safely removed from the unit, even with the power still on. (The RAID Status panel will indicate that all the partitions are OFFLINE.) It is then possible to replace the drive with an identical drive. After replacing the drive, click RAID Recovery for that drive, and it will be rebuilt from the other drive. NOTE, do not do RAID Recover before re-inserting the drive, as this may lock up the RAID subsystem and require a complete reboot to recover. RAID recovery is automatically done for any faulty partitions at boot time.

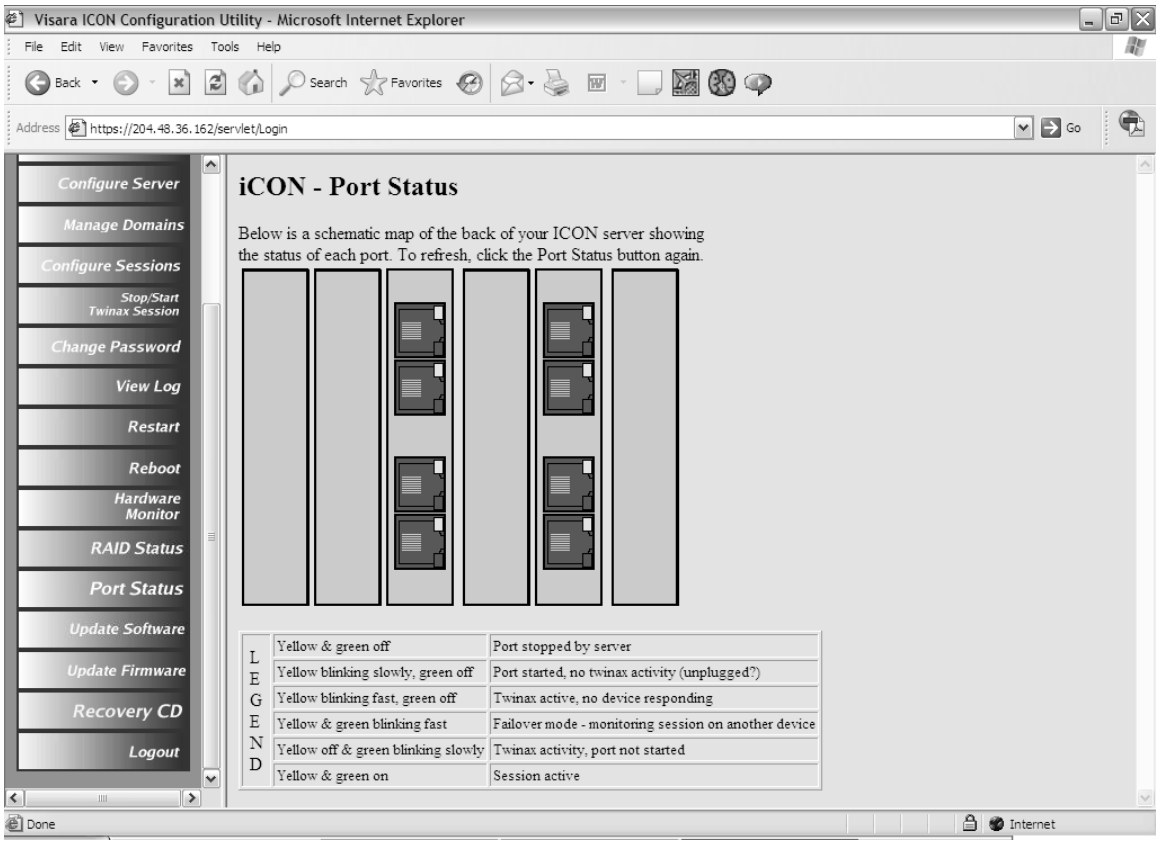


The C drive is the first drive on the left (facing the front of the unit) and the D drive is the second drive from the left. The unit must boot from the C drive. If the C drive goes bad and the unit cannot boot, then can you can swap the C and D drives (since they are mirror images of each other). RAID recovery will automatically begin after boot if one drive is faulty. If a replacement drive is not available, the unit will run fine with only the C drive. Once a replacement is available, it can be added and RAID recovery will sync it with the C drive.

Note: The RAID subsystem is started at boot time only if there are TWO drives in place. If a drive fails, and the unit rebooted with only one drive, the unit must be rebooted with both drives before RAID will operate. If a drive fails and is taken OFFLINE and removed, it may be replaced anytime later and RAID recovered, as long the unit was not rebooted.

Port Status

The Port Status panel displays a map of the back of the iCON server, showing the status of each port.

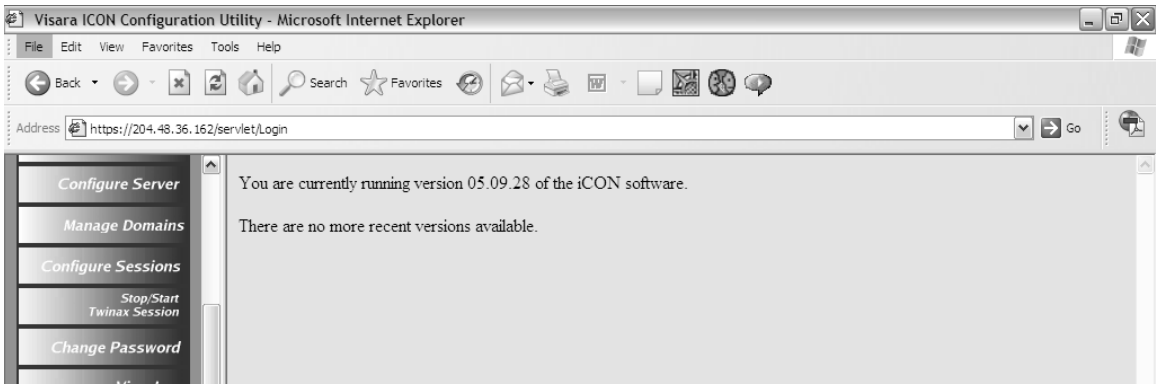


Yellow	Green	
Off	Off	Port stopped by server
Blinking slowly	Off	Port started, no twinax activity (unplugged?)
Blinking fast	off	Twinax active, no device responding
Blinking fast	Blinking fast	Failover mode - monitoring sessions on another device
Off	Blinking slowly	Twinax activity; port not started
On	On	Session active

Update Software

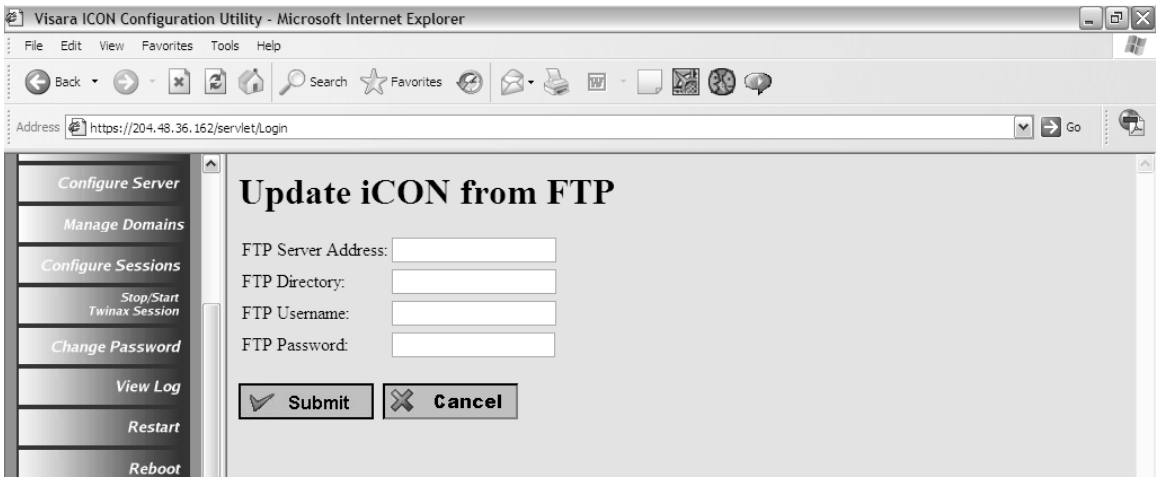
The Update panel will return the information of your current version of the Visara iCON Software. If there is an update available, you will be asked if you would like to download the update.

visara.com



The Update panel will return the information of your current version of the Visara iCON Software. If there is an update available, you will be asked if you would like to download the update.

Your FTP Site



To update the iCON program from an FTP server, enter the address of the server, the directory where the file is located, your username and password. Click **Submit**.

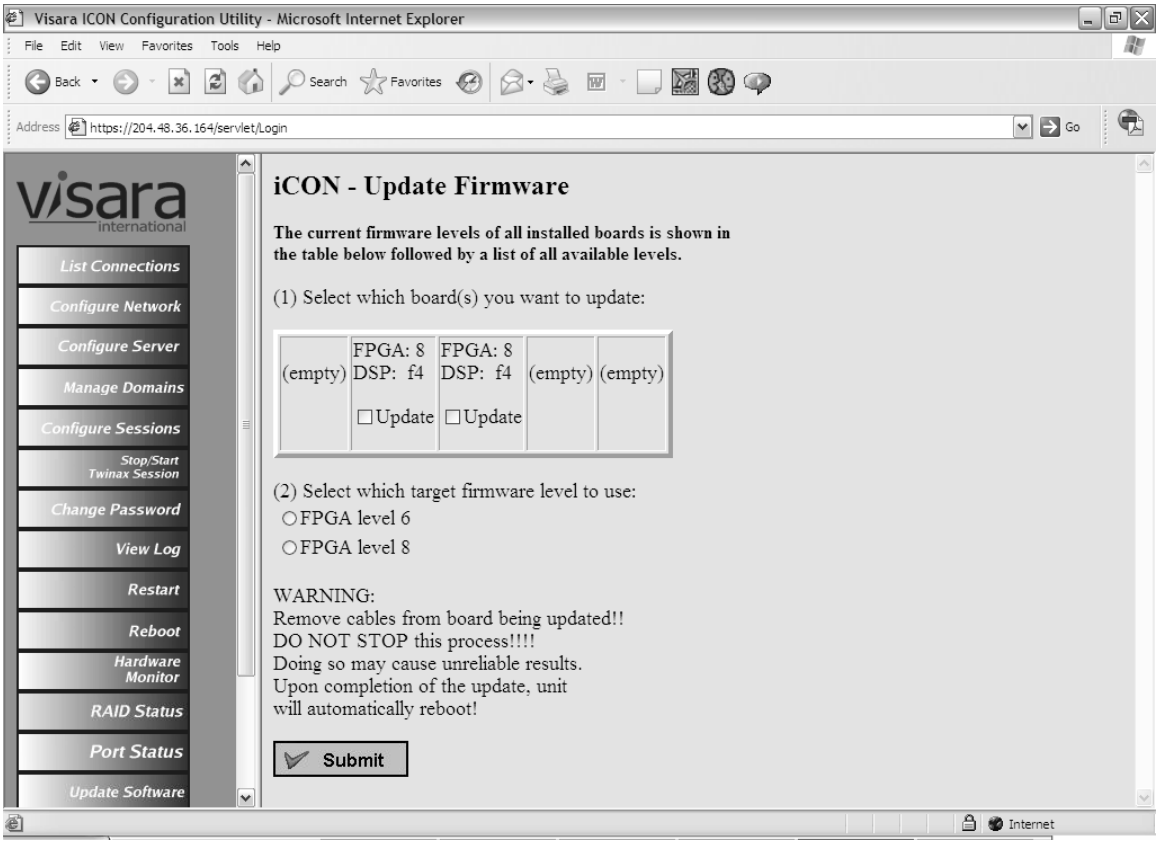
CD-ROM

Place the update CD into the drive on the cd-rom drive on the iCON-XT and click **Submit**.

USB Connected Device

To update the iCON software when the update is located on a USB storage device, plug the device into one of the unit's USB ports. Click **Submit**.

Update Firmware

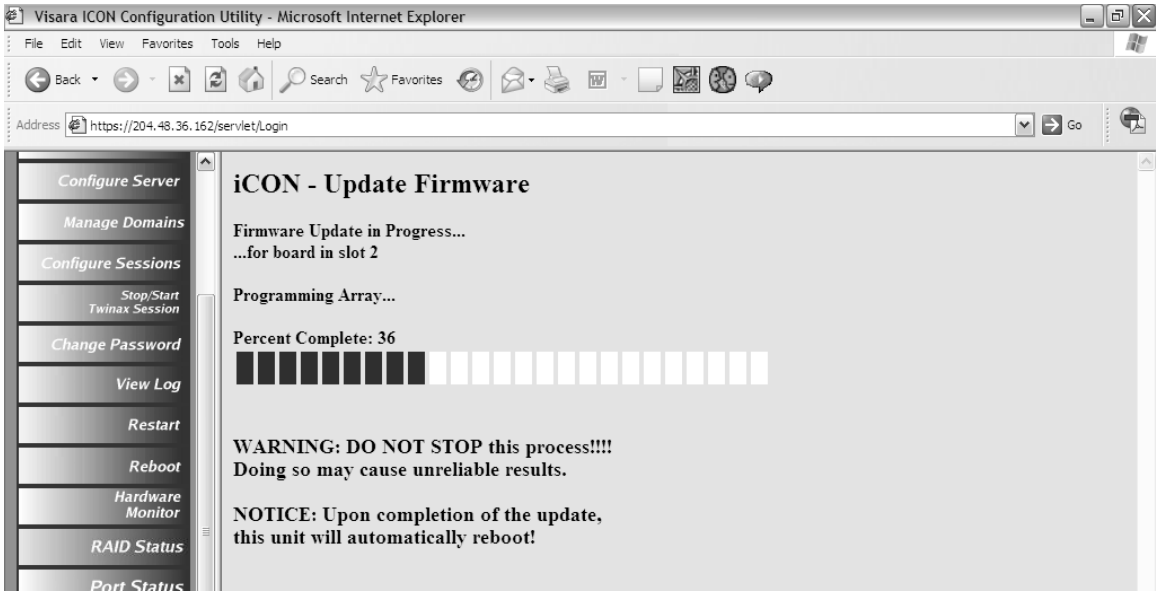


The Field Programmable Gate Array (FPGA) on the iCON Quad Twinax Adapter board can be updated onsite. This screen shows the QTAs in the unit, and their current revision level. If you updated the system software and the update included a new firmware revision for the FPGA, the new level will be available here for you to choose.

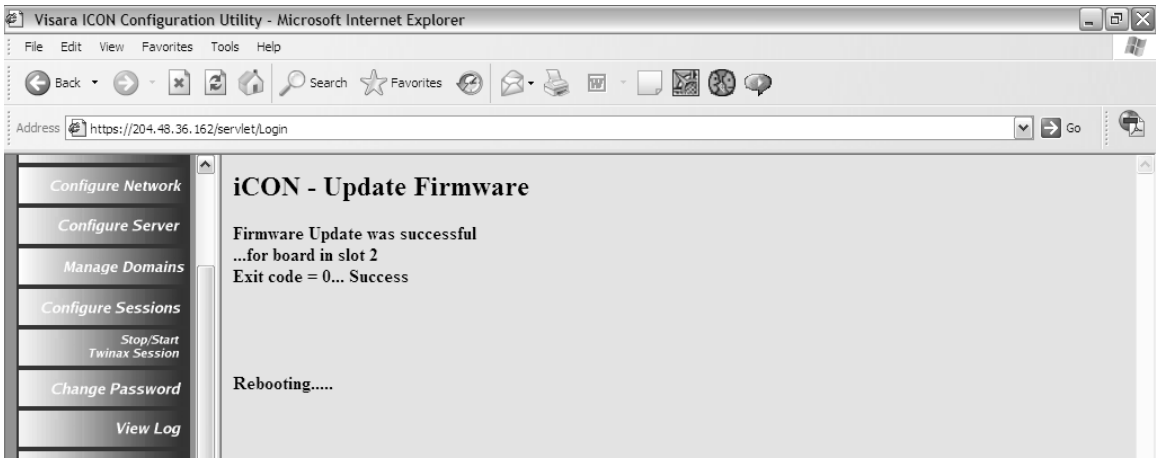
FPGA firmware updates are not done automatically, because the QTA cannot be used during the 15-20 minutes it takes to update and verify each FPGA. A full unit reboot is required to bring the board back into operation.

You may select multiple boards to be updated with the same revision level.

WARNING! Unplug cables connected to the board being updated before beginning the update.



Do not stop this process! It will take 15-20 minutes for each board you selected.



The unit will automatically reboot when the process is complete.

Recovery CD

The Recovery CD is a full copy of the RAID disk subsystem stored in a compressed format on the CD. You can make a Recovery CD whenever you want – whenever you feel that the system is working as it should.

Typical times to create a Recovery CD:
- Before a major configuration change
- Before a software update
- Before joining or leaving an ICON Domain.
- After any of these events and you are satisfied with the new system

Note: The Recovery CD does not back up information currently in RAM, or in the firmware installed on the QTA boards. It only copies the data on the hard drives.

It will take approximately 30 minutes for the creation of the Recovery CD to complete. Once the CD is created, you should label it with the following information:
- Date created
- Revision level
- Name of iCON server

Restoring from a Recovery CD erases the current disk contents and replaces it with the snapshot taken when the Recovery CD was created. When a recovery is needed, place the Recovery CD into the drive and IML the unit. If the CD was created on this unit, it will automatically restore the hard drive.

If the CD was not created on this unit, you will be prompted on an attached display for input to continue. **If no display/keyboard is attached, the unit will be hung waiting for a response to the prompt!**

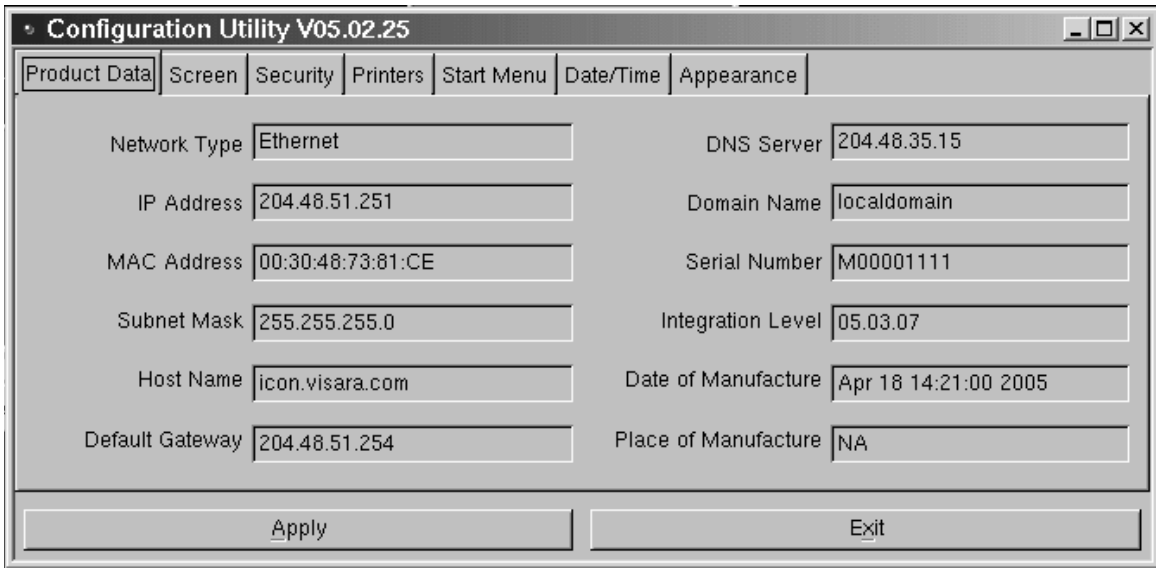
Logout

Clicking **Logout** will immediately disconnect the current administrator session. The session will automatically logout after 30 minutes of inactivity.

General Configuration

Note: The configuration panels that follow are accessible ONLY if a monitor, keyboard and mouse are attached directly to the unit.

The Configuration program can be started on the iCON-1T by choosing **Settings** and then **General** from the Start Menu. The Setup screen appears as follows:

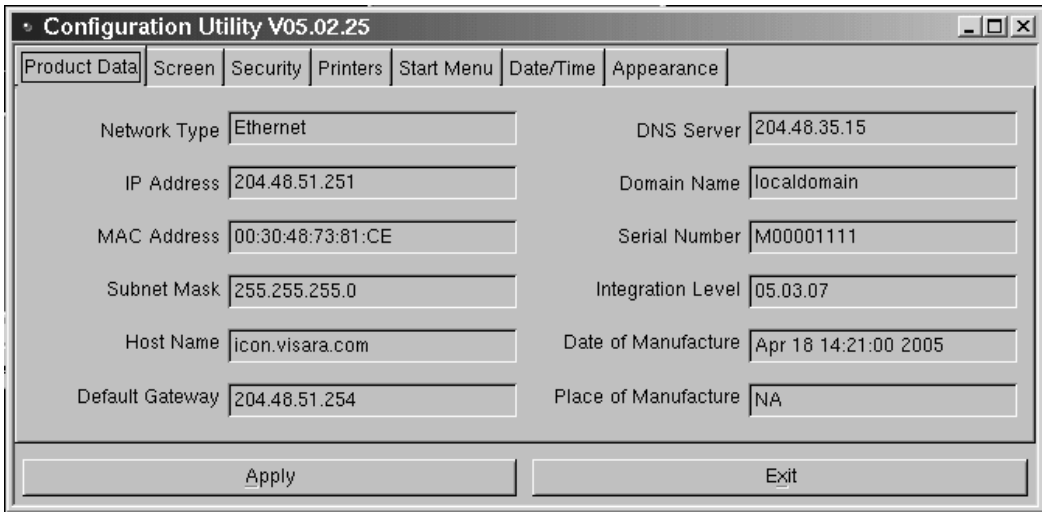


The following menus can be selected:

- **Product Data**
- **Screen**
- **Security**
- **Printers**
- **Start Menu**
- **Date/Time**
- **Appearance**

Each of the topics is described in detail on the pages that follow.

Product Data



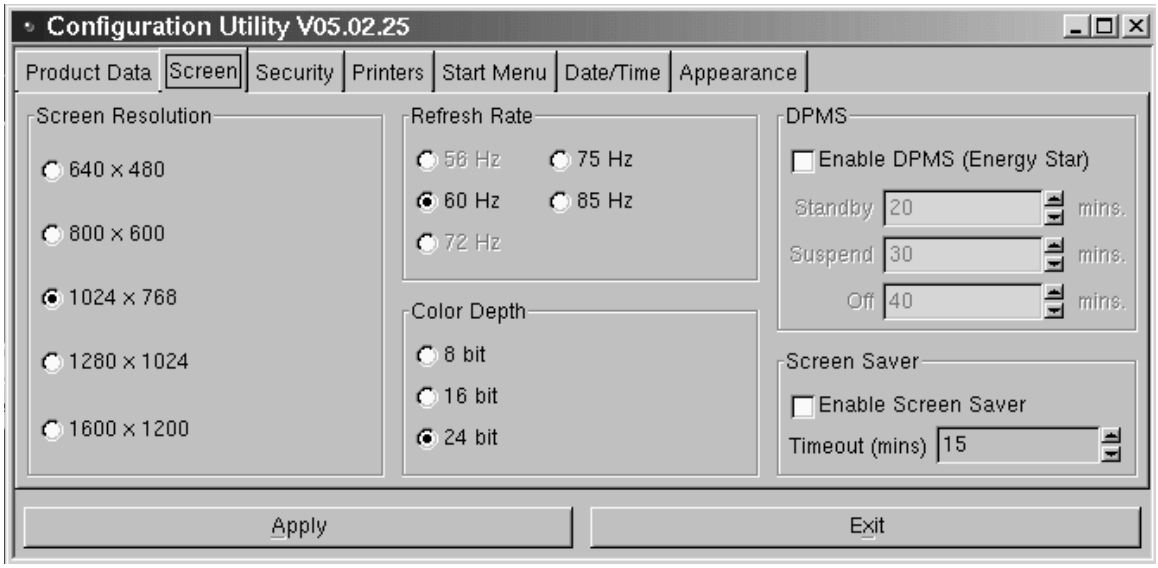
The information provided in the iCON-1T Configuration panel will help with the determination of hardware and software levels of your unit. Information that is provided in this panel is:

- **Network Type** – Configured Network type
- **IP Address** – Configured IP Address
- **Mac Address** – Media Access Control Address - a hardware address that uniquely identifies each node of a network.
- **Subnet Mask** – Configured Subnet IP Address
- **Host Name** – Configured Host name
- **Default Gateway** – Default Gateway IP Address
- **DNS Server** – Domain Name Server primary IP Address
- **Domain Name** – Configured Domain Name
- **Serial Number** – Hardware serial number of the unit, provided during the manufacturing process.
- **Integration Level** – Software Integration level of the unit.
- **Date of Manufacture** – Date and time the unit completed final testing.
- **Place of Manufacture** – Location of the unit manufacturer.

Note: It is not necessary to choose **Apply** for each screen. However, for changes to become effective you must click **Apply** before exiting the configuration program. Some changes can be done in the running system, other changes need a restart of the window manager or the Thin Client.

Screen

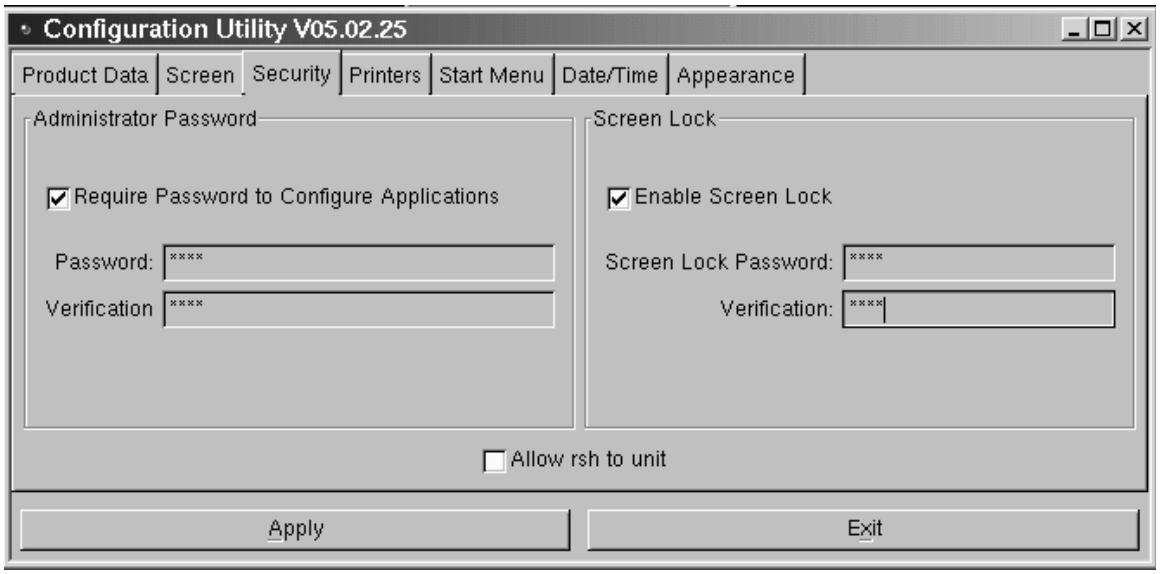
The **Screen** menu allows selection of the screen resolution, refresh rate and color depth. A screensaver may also be enabled.



Select the appropriate **Screen Resolution**, **Refresh Rate** and **Color Depth** for the monitor. If enabled, DPMS (Display Power Management System) will control the power mode of the monitor according to the timeouts set in the scroll panels. If the screensaver is enabled, a timeout of 1 to 120 minutes may be specified.

Security

The Security menu allows the user or administrator to password protect the iCON-1T Configuration program as well as the configuration panels of the emulators.



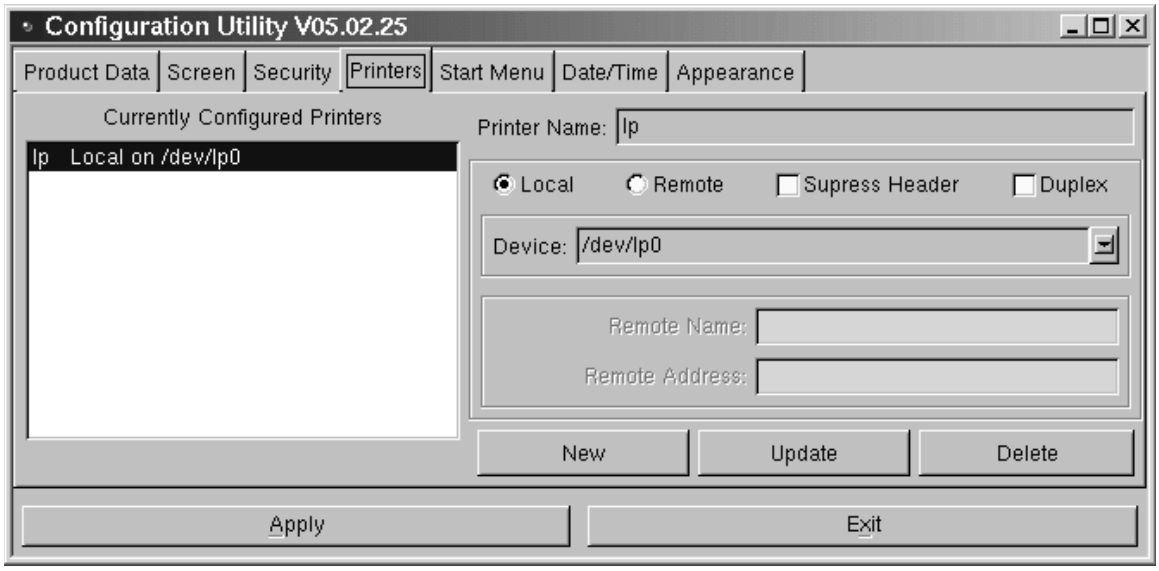
Administrator Password - Click the check box to enable password protection. Enter

a password in the **Password** field, then reenter the same password in the **Verification** field.

Screen Lock - Click the check box to enable screen lock. Enter a password to use when unlocking the screen in the **Screen Lock Password** field, then reenter the same password in the **Verification** field. When Screen Lock is enabled, the password will be required if the screen saver has locked the display, or if the user has locked the display by pressing **Ctrl-Alt-L**.

Selecting **Allow rsh to unit** will allow other machines to access the unit and execute commands by using rsh (remote shell).

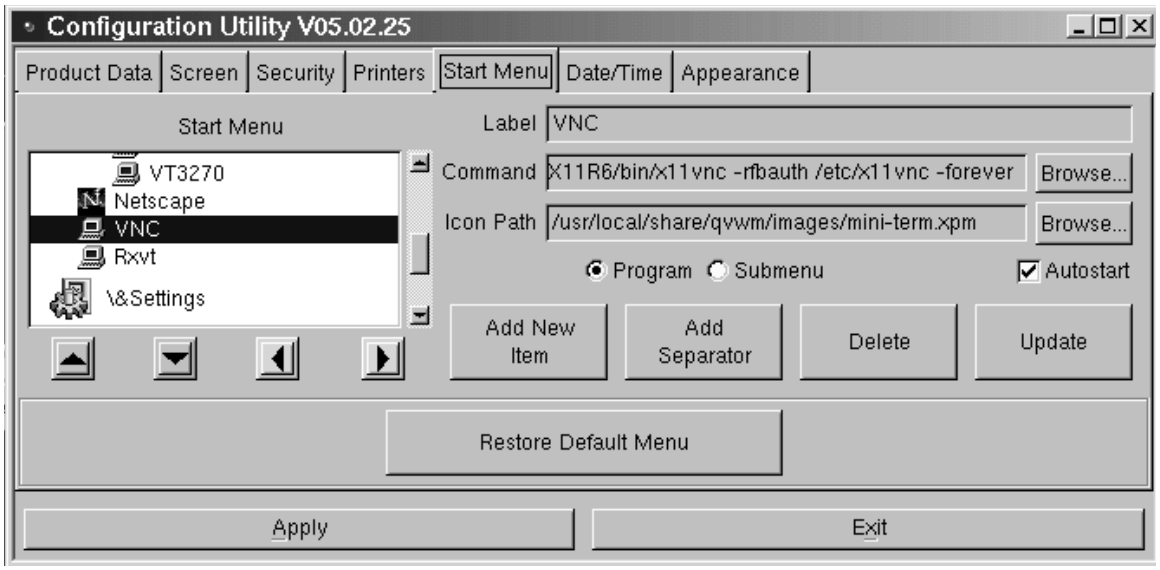
Printers



- **Currently Configured Printers** – Click with the mouse to select a printer.
- **New** – Add a new printer definition. To add a new printer, fill in the appropriate field and click **New**.

Start Menu

The Start Menu configuration allows the user to add or remove programs from the iCON-1T Start Menu. The Start Menu configuration also allows organization of the Start Menu by rearranging the order of programs or by sorting them into different folders.



To add a new Start Menu item:

1. Highlight an existing folder or program in the **Start Menu** scroll box. The new item will be added beneath the highlighted item.
2. Click **Add New Item.**
3. Enter the name of the folder or program into the **Label** field.
4. If the addition is a program, enter the path to the program in the **Command** field.
5. To add an icon to the menu, enter the path into the **Icon Path** field.
6. Select **Submenu** to create a folder, or the **Program** to add a program to the Start Menu.
7. Click **Update** to view changes.

To add a separator line to the Start Menu:

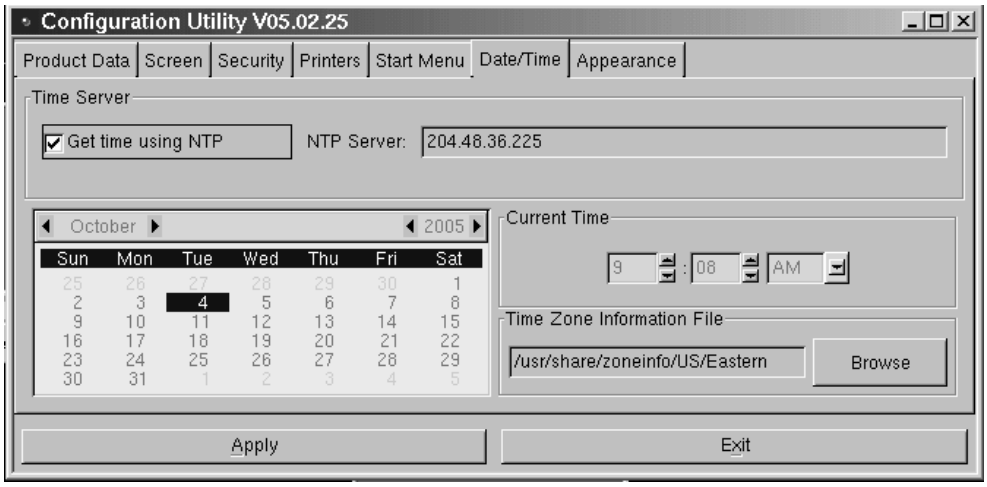
1. Highlight an existing folder or program in the Start Menu scroll box.
2. Click **Add Separator**. The Separator will appear in the Start Menu scroll box below the highlighted item.

To delete a folder, program, or separator from the Start Menu:

1. Highlight the desired item in the Start Menu scroll box.
2. Click **Delete**.

Date/Time

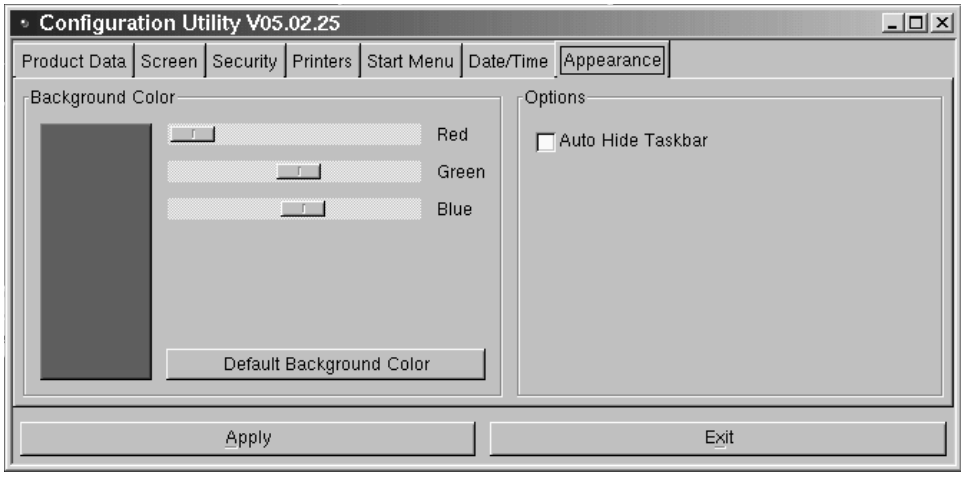
The Date/Time configuration menu allows the date and time of the unit to be set.



1. To change the month, click the right or left arrows until the appropriate month is displayed.
2. To change the year, click the right or left arrows until the appropriate year is displayed.
3. To set the day, click the cursor over the current day in the calendar.
4. Select the time by clicking the arrows to increase or decrease. To indicate AM or PM, click the arrow and select AM or PM from the list.

Appearance

The Appearance menu allows the user to customize their display screen.



Use the sliders to select a color for the desktop background. Click **Default Background Color** to return to the system default.

If **Auto Hide Taskbar** is selected, the taskbar will not appear on the desktop. To display the taskbar, move the mouse pointer to the area at the bottom of the screen.

Chapter 4. VT5250 Twinax Emulator

The VT5250 Twinax Emulator is designed to provide a wide range of functions and applications. Data messages are communicated between the emulator and the System/3X or AS/400 through a twinax cable up to 1500 meters long. The iCON-XT equipped with a VT5250 emulator can be attached to any of the following processors and control units:

- IBM System/36
- IBM System/38
- IBM 5394 Control Unit
- IBM 5494 Control Unit
- IBM AS/400

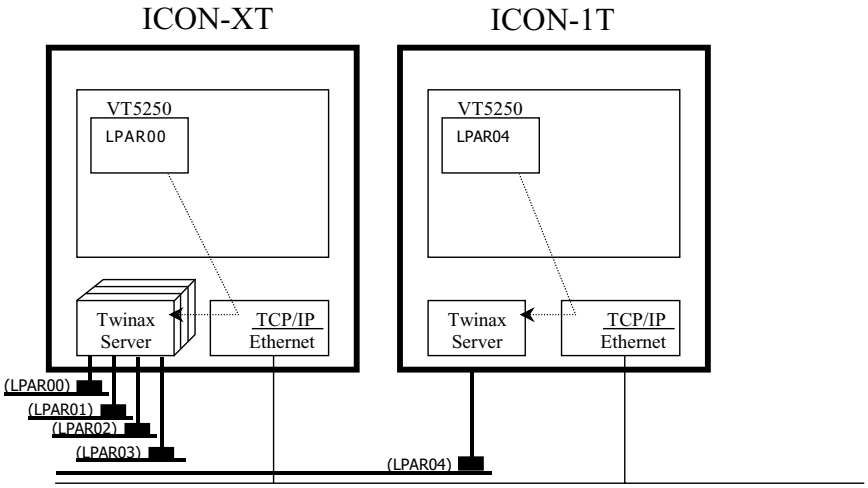
The VT5250 supports 122-key and 104-key keyboards.

Standard Features

- **Multiple Emulations** – The VT5250 can emulate several different display types. Both monochrome and color displays can be emulated. For display stations attached to a System/36 or System/38, a 132-column color format can be selected.
- **Full-Screen Setup Menus** – The full-screen setup menus offer simplicity and ease of use for all setup functions.
- **User Selectable Color Mixing** – With the color VT5250, you can select the shades of the colors for the attributes.
- **Optional Features**
- **US English**
  - 104-Key EBCDIC US English Typewriter
  - 122-Key 5250 US English Typewriter
  - 122-Key 3270 US English Typewriter

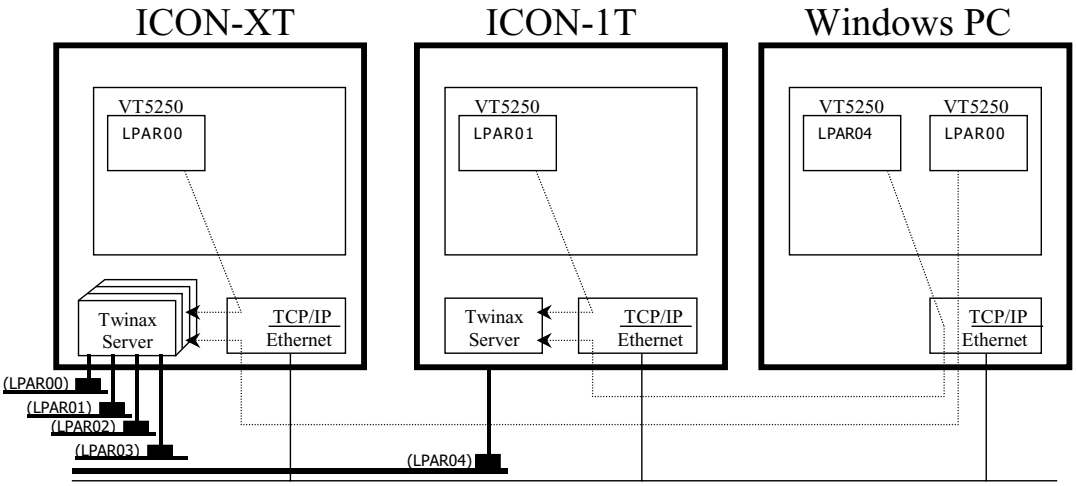
VT5250 Connectivity

VT5250 is a twinax emulator that uses TCP/IP to connect to a **Twinax Server**. The example below shows how VT5250 connects to the internal Twinax Server in each iCON, giving the impression of a normal, self-contained, 5250 Twinax Display unit.

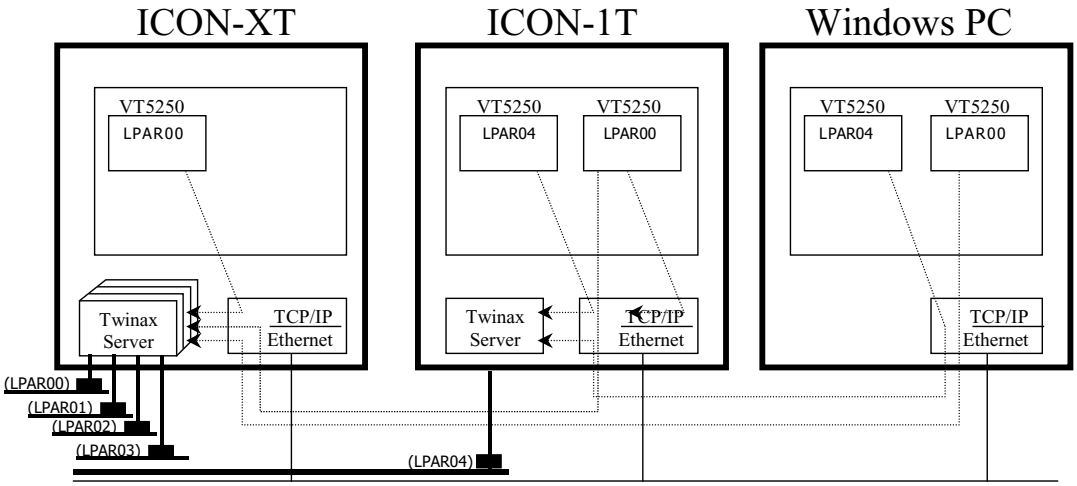


With **Session Sharing** configured, *multiple* VT5250 clients can connect to a Twinax Server. This way there is both a local and a remote display of the same Twinax session. Keys typed on one keyboard show up on all displays, so there is no guessing as to whether someone else is currently entering a command. Configurable **keyboard arbitration** will lock out other keyboards while a command is entered. **Keyboard Lockout Override** will allow a privileged user to take control of the keyboard if necessary.

In the following example, the Windows PC has a VT5250 connection to both iCONs, allowing console control of two LPARs from a single desktop. So the SysAdmin can enter console commands from his office, while the IT staff still have local consoles in the computer room.



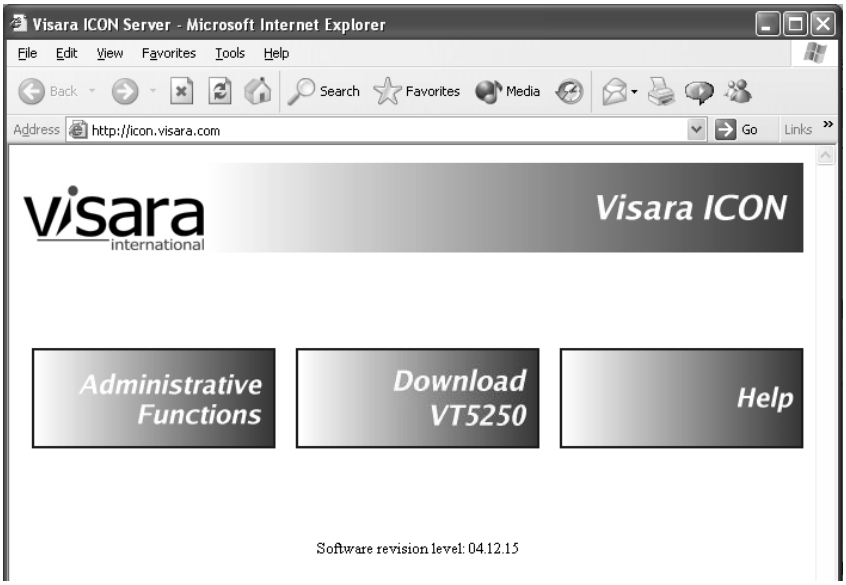
In the last example, each iCON uses VT5250 to connect to its own Twinax Server. The second iCON has a VT5250 connection to itself *and* the first iCON. The Windows PC has a VT5250 connection to *both* iCONs.



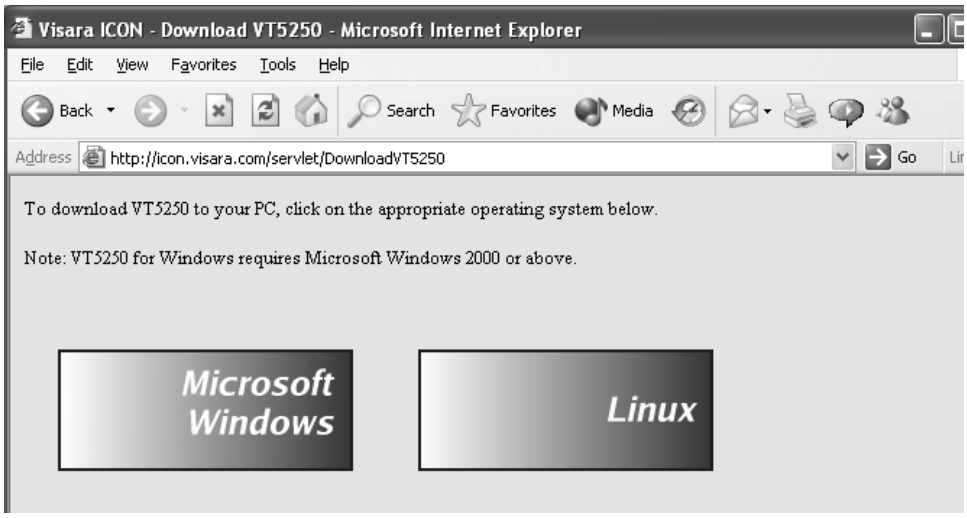
VT5250 Application Download and Installation

The iCON is delivered with the VT5250 application installed and will start up with the iCON Session Manager window open. However, when using a Windows or Linux PC as a console, the VT5250 application must be downloaded and installed.

1. Use the web browser to open the main page of the iCON web server.



2. Click **Download VT5250**. The operating system selection screen will open.

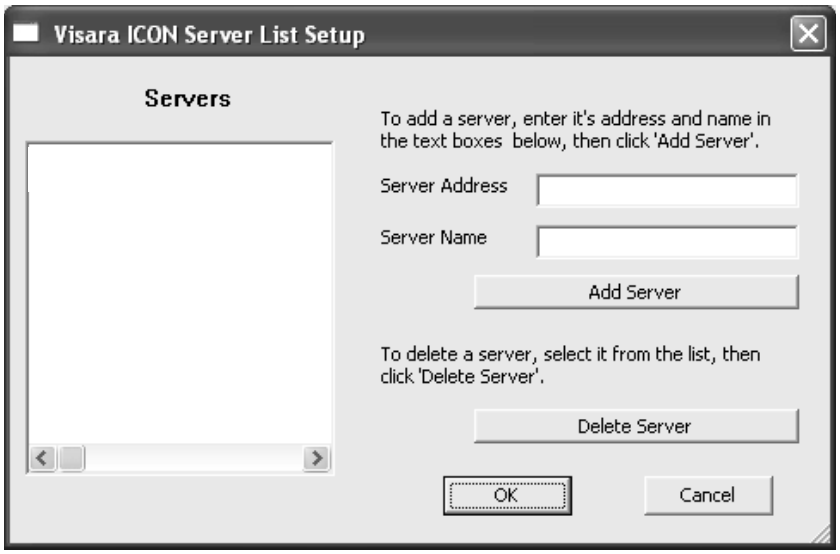


3. Select the appropriate operating system. This will begin the file download for the VT5250 application. Choose to **Open** the file. The self-extracting file will install.
4. Select *Visara Intl-iCON Session Manager* from the Start Menu > Programs list.
5. The iCON Session Manager will open. If server addresses have not yet been entered into the server list, a message will appear that the Session Manager is "Searching for Servers".

Server Setup

To add a server to the list:

1. Click the **Server** button at the bottom of the Session Manager window. The Visara iCON Server List Setup window will open.



2. Enter the Server Address (IP Address or DNS Name) and Server Name. Click **Add Server**. The new server name will appear in the **Servers** window.
3. Click **OK**. You will be returned to the Session Manager screen. Click the **Refresh** button to view the updated list of servers.

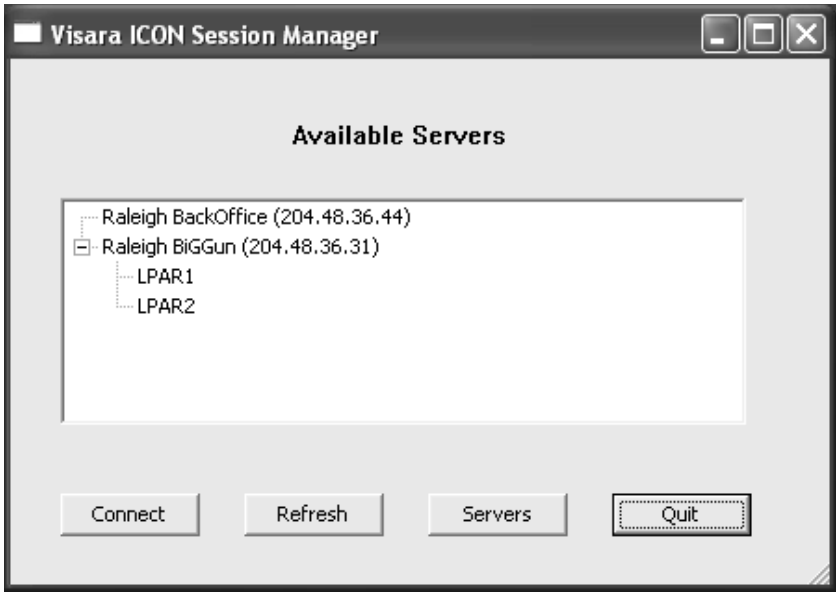
Note: The Server Address or Server Name may not be edited once added, only deleted. If a correction is needed, simply delete the server and add again.

To delete a server from the list:

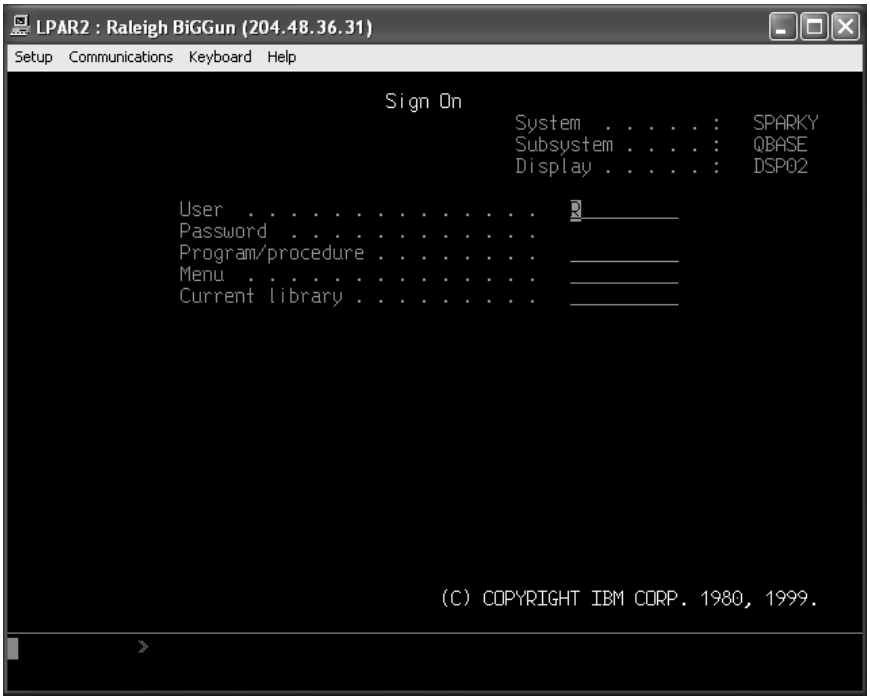
1. If the Server List Setup window is not already open, click the **Server** button at the bottom of the Session manager window.
2. Highlight the name of the server in the Server List window.
3. Click **Delete Server**. Click **OK** to be returned to the Session Manager Window. Click the **Refresh** button to view the updated list of servers.

Connecting to a VT5250 Session

After following the previous instructions for adding a server, its name will appear in the Session Manager window as an "Available Server".



To connect to an available server, highlight the server name and click **Connect**. The Session Screen will appear.

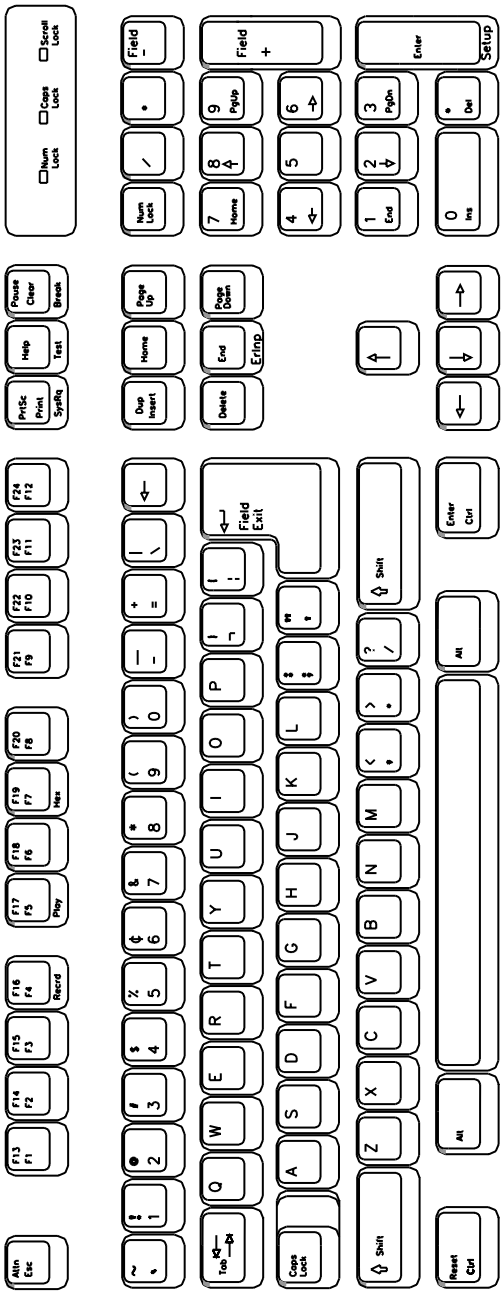


Setup

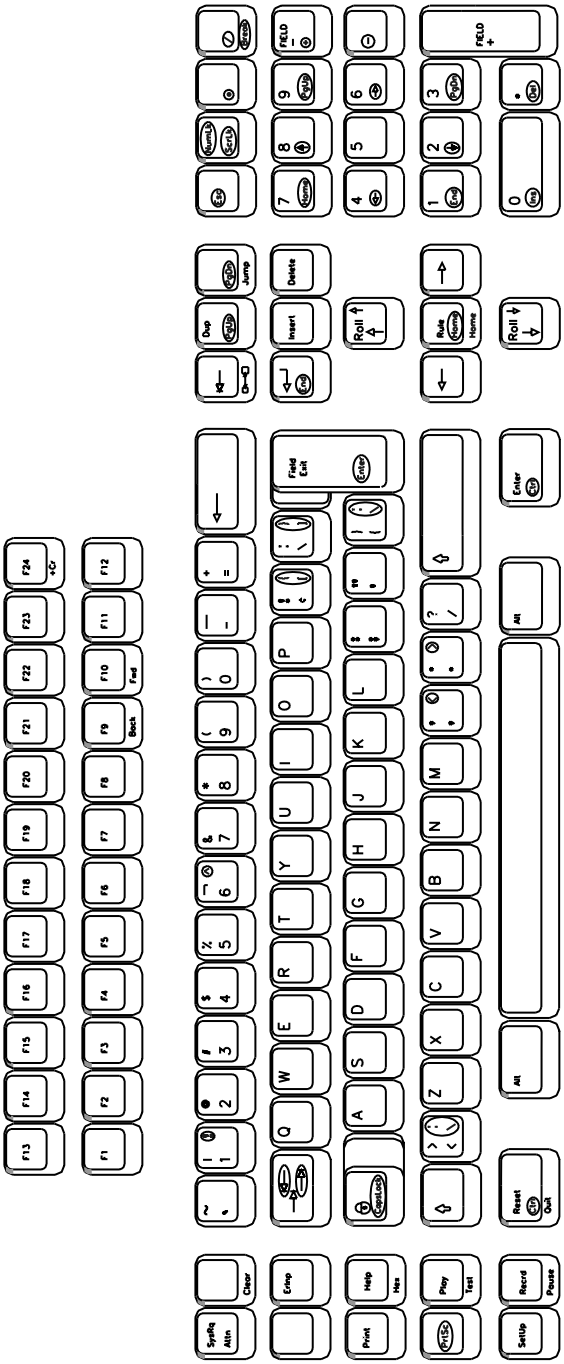
Keyboard Setup

Use the following table to determine which keyboard you have.

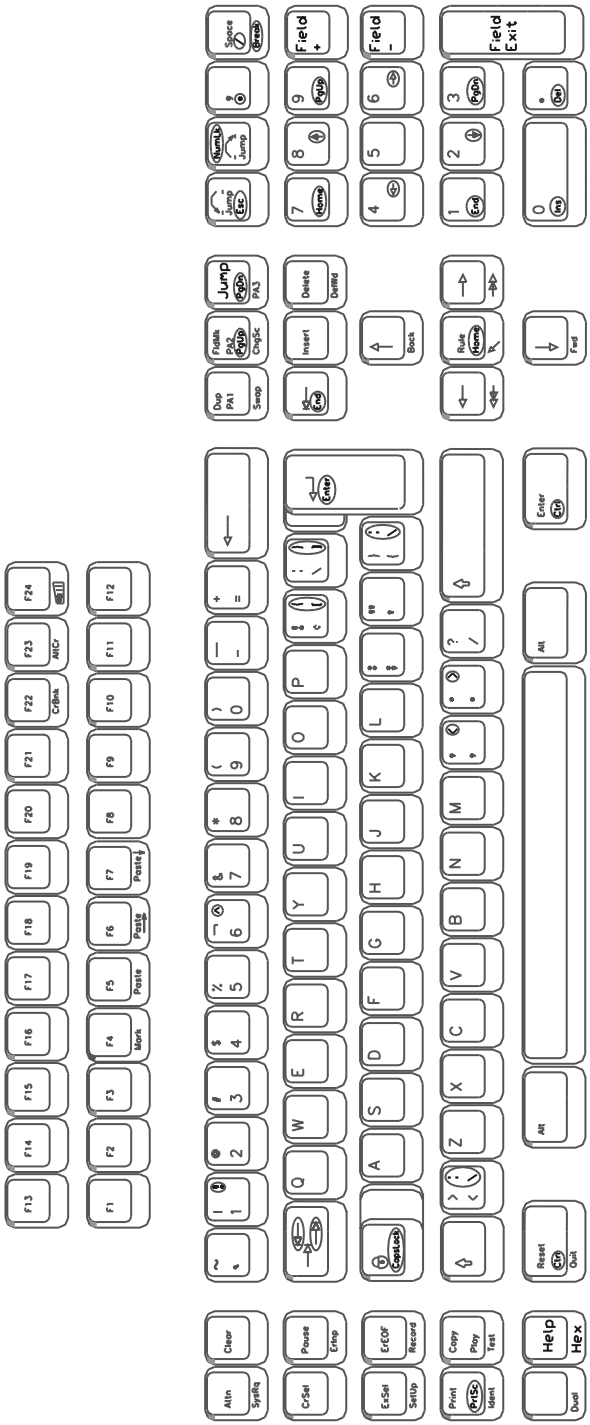
Keyboard	Description
104	See keyboard diagram page 4-8.
122-5250	See keyboard diagram page 4-9.
122-3270	See keyboard diagram page 4-10.



PC Keyboard with Twinax legends

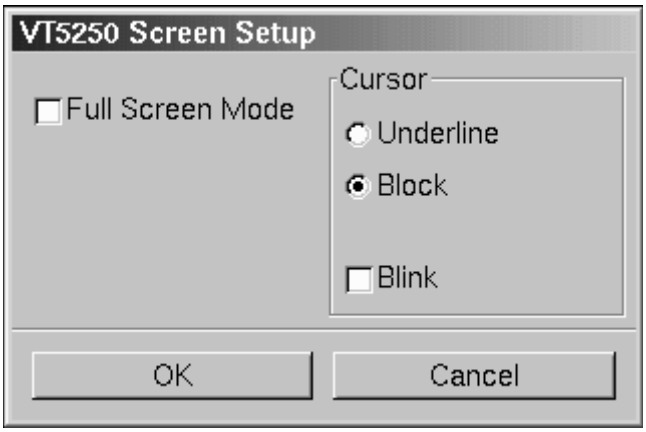


TWINAX WITH PC LEGENDS
KB122 TW/PC TWINAX



Coax with Twinax legends

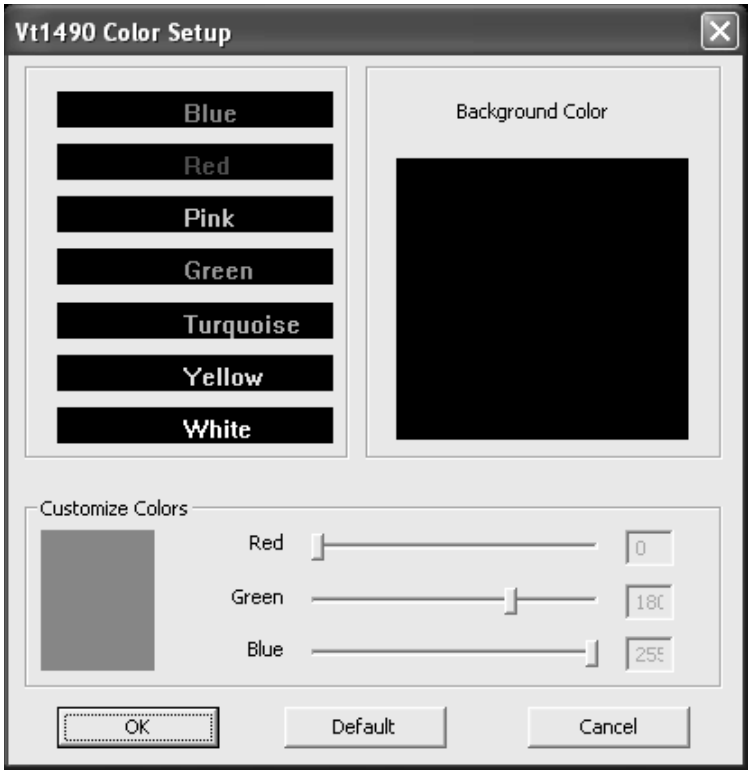
Screen Setup



Selection	Description
Block	Selects a block cursor (n). This is the default setting.
Underline	Selects an underline cursor (_).
Blink	When selected the cursur will blink. Otherwise the cursor is solid.
Full Screen Mode	Forces the window to be full screen and it cannot be resized .

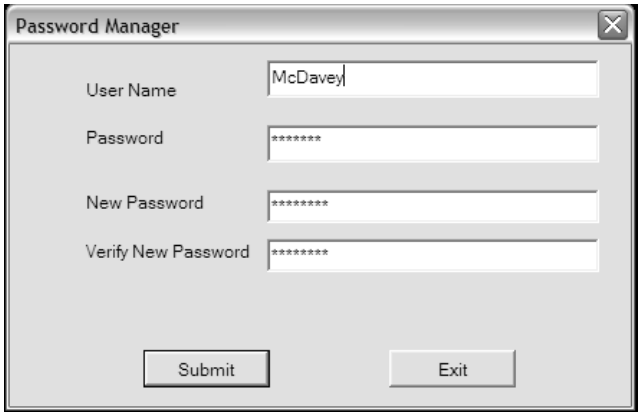
Note: Underline and Block cursor mode are mutually exclusive.

Color Setup



- **Colors** – Use to select a color you desire as background or designated text.
- **Background Color** – Use any or all of the three slider bars until the desired color shows in the Background Color box and as the background of this screen.
- **Customize Colors** – Use any or all three slider bars to adjust the colors showing on the color list.

Password

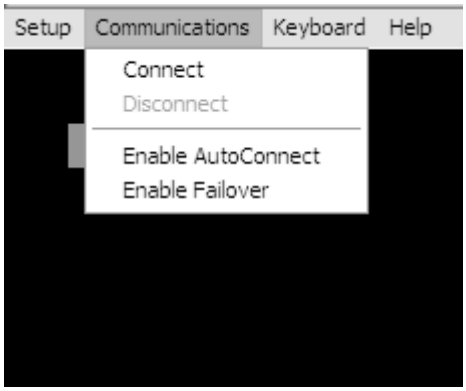


For convenience, enter your User Name and Password here. VT5250 will automatically use it when connecting to a password protected session.

The password needed to access a VT5250 session may be changed using Password Manager. Enter the existing User Name and current password. Enter a new password, and verify by entering the password again.

Communications

Move pointer over Communications on the menu bar to display the drop down menu.



Connect

Activate your connection to the currently selected host session.

Disconnect

Deactivate your connection to the selected host session.

Enable AutoConnect

If AutoConnect is enabled, this session will automatically be started when Session Manager is started.

Enable Failover

If this feature is enabled and the session fails, VT5250 will search all the servers in the Server List for a session by the same name. If this session is active, VT5250 will connect to it.

Keyboard

Override Lockout

When multiple emulators are sharing the same session with arbitration, keyboard usage is only allowed at one emulator. All other emulator keyboards are locked. A locked keyboard is indicated by a change in color of the status line area and an indication in the title bar.

Clicking Override Lockout will unlock your keyboard and lock the keyboards of other emulators. The Session Arbitration Time (configured in server) will be the elapsed time (in seconds) between the last keystroke of one user and the time that another user may have keyboard control.

Note: Override Lockout is a user privilege assigned per session by selecting Read/Write with Override. See Chapter 3, *Configuring Sessions*.

Yield Lockout

Clicking Yield Lockout will relinquish control of the keyboard without waiting for the timer to expire.

Help

Move pointer over **Help** on the menu bar to display the drop down menu.

About

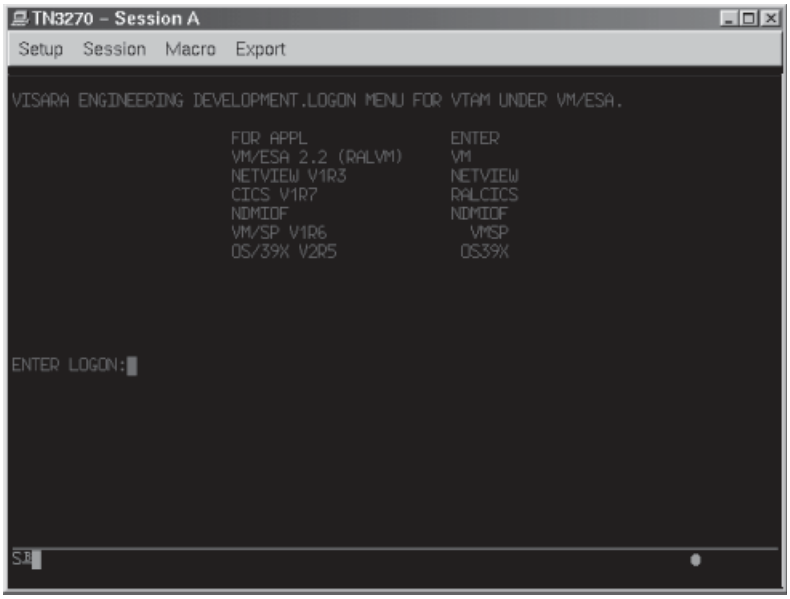
Displays current version.

Chapter 5. Using TN3270, TN5250, TN5250EP, 1451, VT220 and VT3270

TN3270

What is TN3270?

Like Telnet, TN3270 enables access to programs running on remote hosts. Unlike Telnet, TN3270 provides the means to access 3270 programs running on IBM mainframes.



TN3270 enables the iCON to function as though it were a 3279 mod 2, mod 3, mod 4, or mod 5 terminal. Unlike Telnet, TN3270 can manipulate the entire screen image, fields and function keys, in a way identical to a 3270 terminal. TN3270 provides the following standard features:

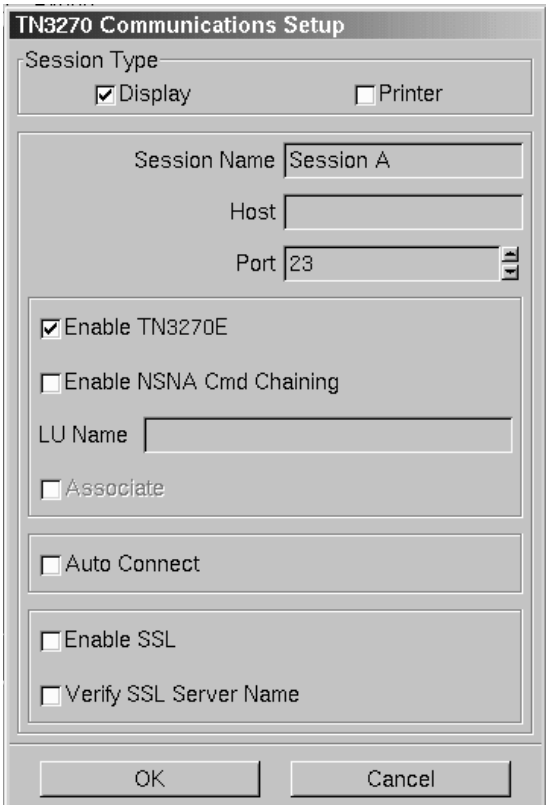
- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.
- **Color Display** – The color monitor is programmable in seven colors.
- **Switchable Screen Formats** – TN3270 supports four (4) screen sizes that can be selected from setup menus. The server to which the TN3270 client attaches must be configured to support the screen size used. Check with your system administrator.
- **Mono/DualCase Mode** – Allows characters to be displayed as all uppercase characters or as upper- and lowercase characters.
- **Mark Unprotected Field Indicator** – The 1480 CUT Emulator can be requested to mark unprotected fields with a special character.
- **Row/Column Indicator** – Displays the current cursor location on the operator status row.

- **Numeric Lock** – Allows a field to be defined to accept only numeric characters and the Period, Minus, and Dup keys. The comma may be substituted for the period on some international keyboards.
- **Multiple Sessions** – A maximum of 10 sessions can be accessed with this emulator.

Setting up a remote host as a 3270 terminal

To setup a remote host:

1. Click the Start button in the lower left-hand corner of the screen. The application menu will appear.
2. Click **TN3270**. The main TN3270 screen will appear with four menu options, **Setup, Session, Macro** and **Export.**
3. Click **Setup.**
4. Click **Communications** from the Setup menu. This screen will appear:



- **Session Type** – Select **Display** to configure a TN3270 Display session. Select **Printer** to configure a TN3287 Printer session.
- **Session Name** – Enter the name to be displayed in the window title.
- **Host** – Enter the Internet address of the TN3270 server to which you wish to connect, for example, 192.168.1.1.
- **Port** – If the host requires that a port number (other than port 23) be specified when connecting, select the port number using the up and down arrows or by typing the port in directly.

- **Enable TN3270E** – Select to enable TN3270E support.
- **LU Name** – Enter LU name string (optional, for TN3270E).
- **Auto Connect** – Select to auto connect at program start and to reconnect automatically if disconnected by the server.

Click **OK** to save changes and close Communications Setup, or **Cancel** to close and discard any changes.

Connecting to a TN3270 session

TN3270 will connect to the remote IBM mainframe host. The host then will normally respond with a welcome and will lead you through its log in process. Log in, employing one of the following combinations:

- With the userid and password supplied by the administrator of the host
- With just a userid (some hosts do not require passwords)
- Neither, if the remote host has been set up for it.

To connect to a TN3270 remote host from the main TN3270 screen:

1. Click **Session** to open the TN3270 Session menu.
2. Click **Connect**.

Once connected, use the menus, commands and features of the remote host to access and run 3270 applications.

Logging out of a remote host

1. When you have finished using the remote host, use the host's normal log out command.
2. To disconnect from the host, select **Disconnect** from the **Session** menu.

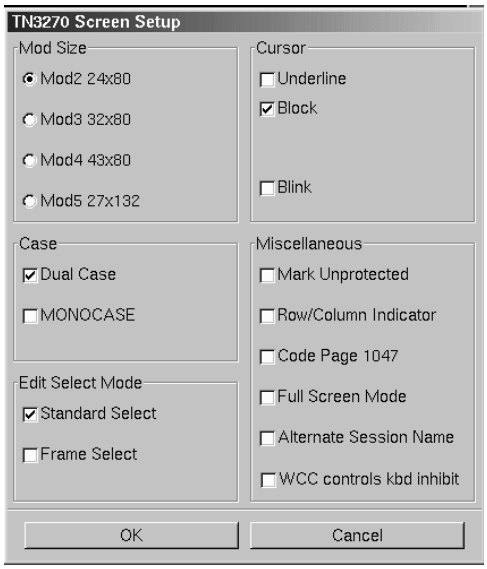
Configuring TN3270 for an application

TN3270 can be configured for a particular application by selecting **Screen**, **Keyboard** or **Color** from the Setup menu.

Screen setup

From the main TN3270 application screen:

1. Click **Setup** to open the TN3270 Setup menu.
2. Click **Screen**.



- **Mod Size** – Select the mod required by the design of the application program. Applications are designed to use one of the above mods, based on the number of rows per screen and characters per row, respectively. The default is Mod 2.
- **Case** – Select **DualCase** for upper and lower case characters. Select **MONOCASE** for all characters displayed as upper case letters.
- **Edit Select Mode** – Choose either **Standard Select** or **Frame Select**. **Standard select** performs an end-of-line wrap function when selecting text. **Frame Select** is used to a specific block of text without automatically performing an end-of-line wrap function.
- **Cursor** – Choose either an underline cursor or a block cursor. Select **Blink** for a blinking cursor.
- **Mark Unprotected** – Select to display a special symbol in each unprotected field on the screen. This enables you to recognize locations where keystrokes can be entered.
- **Row/Column Indicator** – Select to display the current cursor location on the operator status row. Note that the location is determined by the application program on the host system.
- **Alternate Session Name** – With this item unchecked, the name shown in the Task Bar and the Title Bar is "TN3270" plus the configured session name. Checking this item will remove the "TN3270" from the name in both locations. This is particularly useful when there are many sessions, and the name in the Task Bar needs to be shortened.

- **WCC controls kybd inhibit** – In NonSNA console operation, MVS typically sends console messages without a Restore Keyboard in the WCC. This can cause X-Clock hang conditions. With this item unchecked, the TN3270 emulator will behave as though Restore Keyboard is set in the WCC for every Write type command. With this item checked, the Input Inhibited area of the Operator Status line will be controlled by the actual WCC received from the host system. This is typically only needed for NonSNA TSO sessions.
- **Full Screen Mode** – Select to open the TN3270 application in Full Screen Mode. TN3270 must be closed and reopened for this setting to become effective.

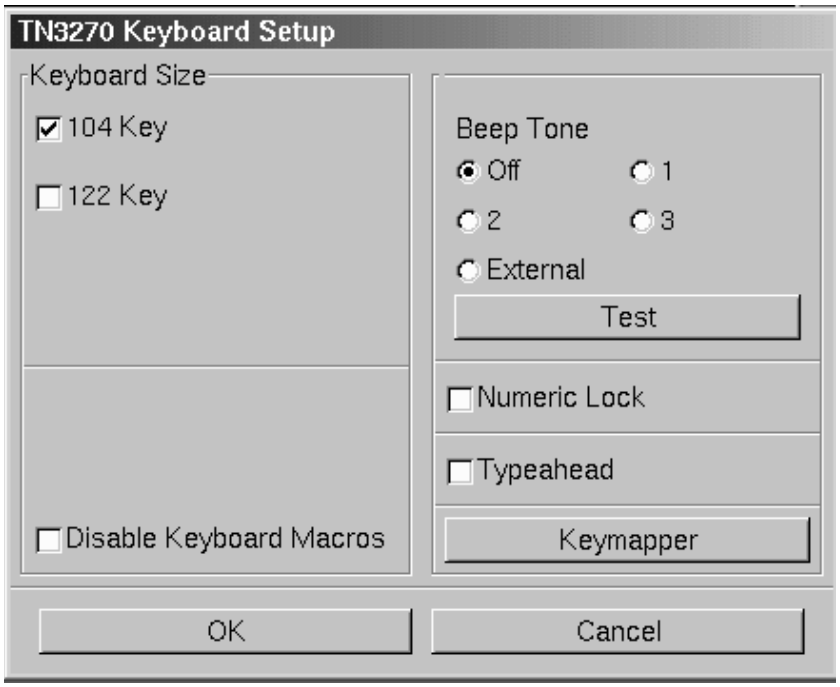
  Note: To access the taskbar or minimized applications on the taskbar while Full Screen Mode is in effect, hold down the **Shift** and **Alt** keys while pressing the tab key. Press the tab key repeatedly until the name of the application you wish to bring to the front is displayed.

Click **OK** to save changes and close Screen Setup, or **Cancel** to close and discard any changes.

Keyboard setup

From the main TN3270 application screen:

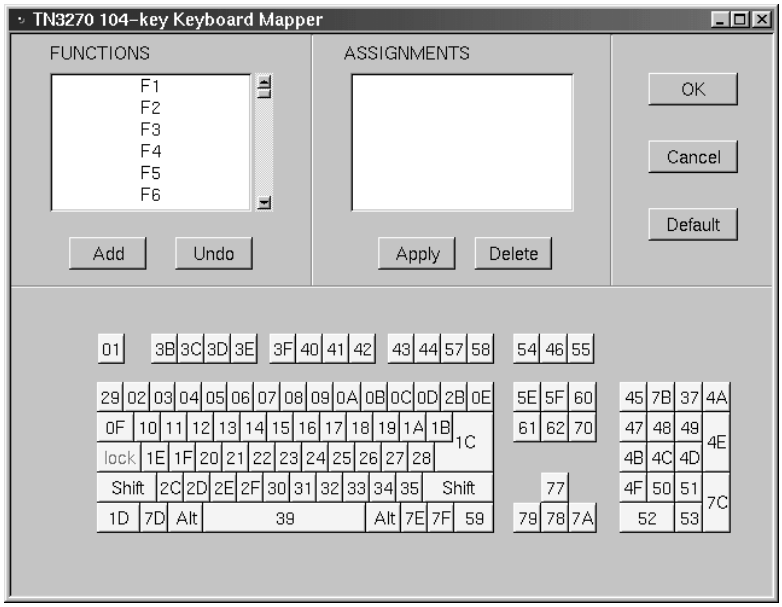
1. Click **Setup** to open the TN3270 Setup menu.
2. Click **Keyboard**.



- **Keyboard Size** – Select either the 104 or 122-key keyboard.
- **Disable Keyboard Macros** – Prevents the user from assigning user-defined macro functions to keys.
- **Beep Tone -** Turn off the beep or select a different tone. You may also select **External** in order to sound a beep through speakers connected to the line out port (instead of the internal beeper).

- **Numeric lock** – If supported by the TN3270 server, will allow numeric keys only for numeric fields.
- **Typeahead** – Enable the Typeahead feature.
- **Key Mapper** – The key assignment (mapping) may be verified or changed as necessary for use in TN3270 applications.

Keyboard Mapper



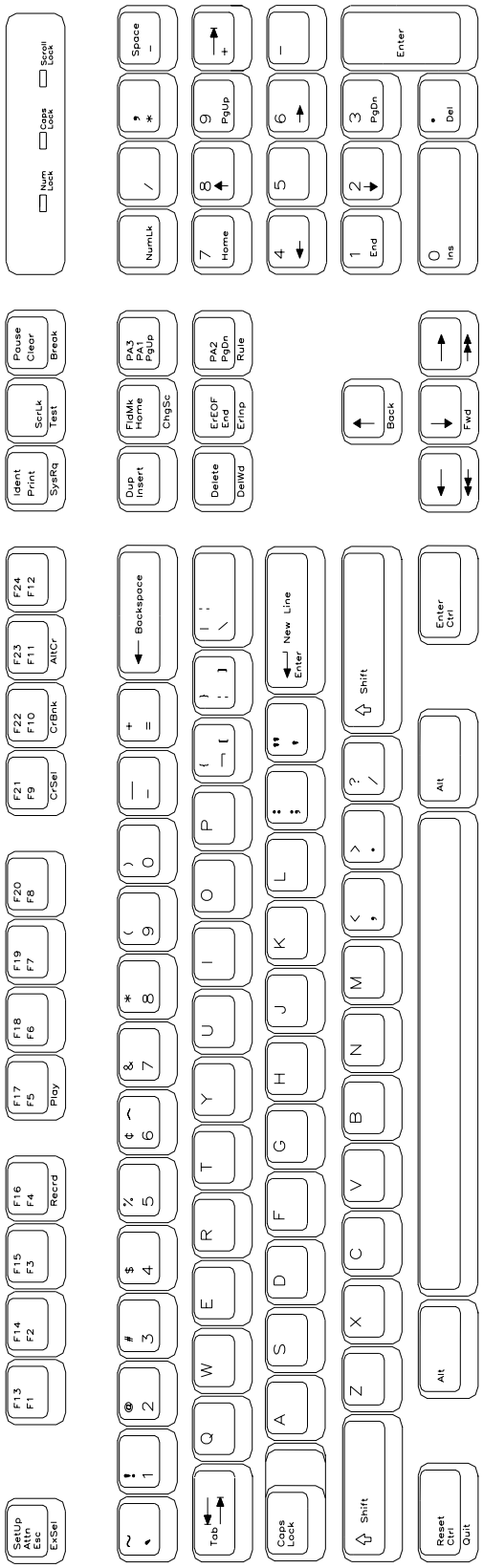
To determine which key is currently assigned to the key, click the appropriate key in the Functions box and the assigned value will be displayed in the Assignments box. Alternatively, on the keyboard layout, using the mouse click on the key to which the value needs to be displayed, the key will be displayed in the Functions box and the assigned value in the Assignments box.

To change the key assignment:

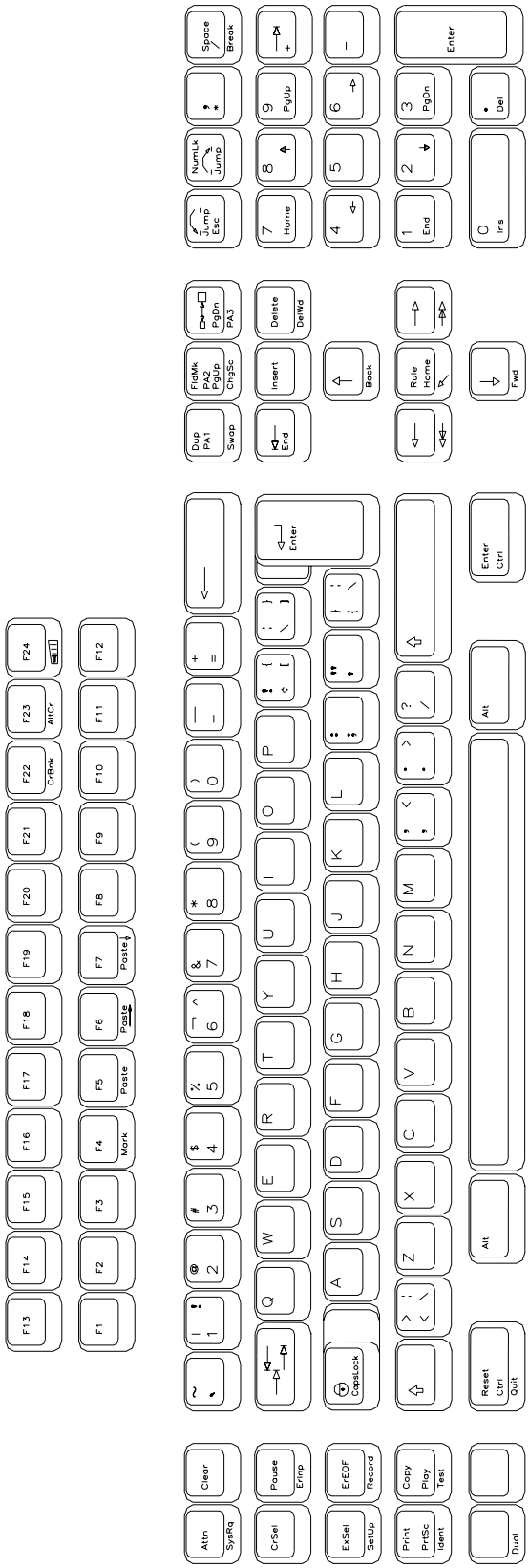
1. Using the mouse, click on the key that needs to be changed on the keyboard layout or alternatively, choose the function from the Functions box.
2. Click **Add** below the Functions box.
3. Assign the new assignment required for the key selected. If a key combination is desired, click either the **Shift**, **Control**, or **Shift + Control** buttons.
4. Click **Apply** when satisfied with selection or click **Undo** to reassign.

   Note: A function can be applied to multiple keys. Assigning a function to a key does not unassign it from a previous definition.
5. Click **OK** to save changes and Exit, or **Cancel** to discard changes and exit. To return the key assignments to their default state, click **Default**.

   Note: TN3270 application must be closed and restarted for changes to become effective.



TN3270
104-key Keyboard Layout

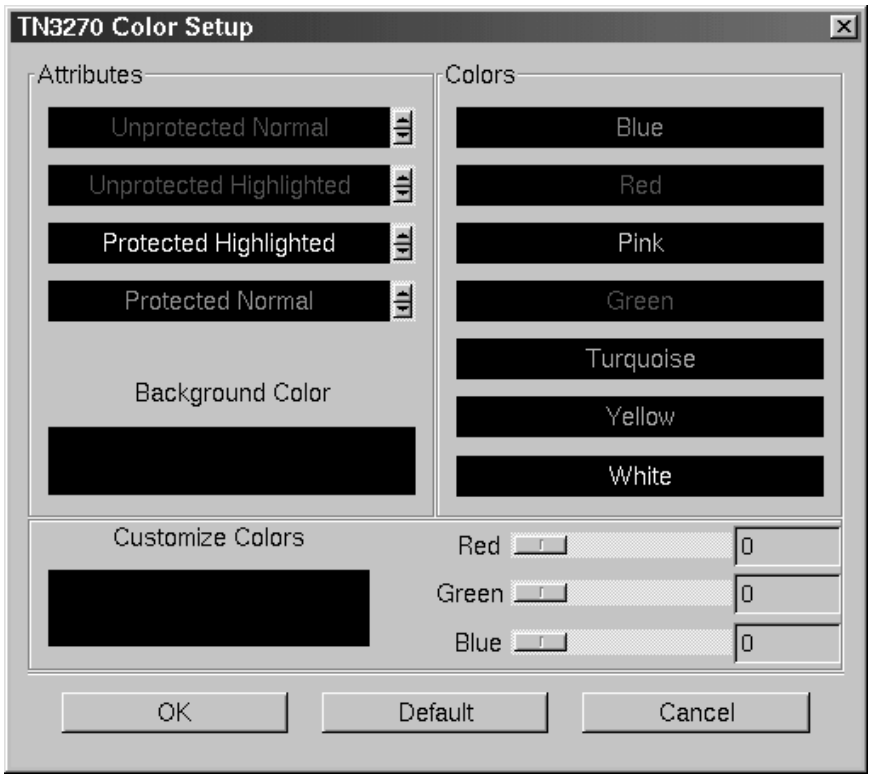


TN3270
122-key Keyboard Layout

Color Setup

From the main TN3270 application screen:

1. Click **Setup** to open the TN3270 Setup menu.
2. Click **Colors**.



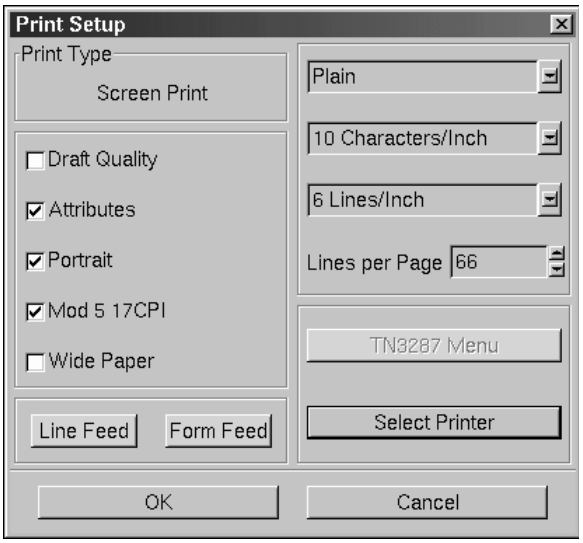
- **Attributes** – Use the arrows to select colors from the Colors list on the right. Select for protected, unprotected, normal and highlighted fields.
- **Customize Colors** – Select a color from the colors list. Use any or all of the three slider bars to adjust the selected color.
- **Background color** – Select the Background Color bar, then apply any or all of the three slider bars until the desired color shows in the Background Color box.

Click **OK** to save changes and close Color Setup, **Default** to set colors to the factory settings, or **Cancel** to close and discard any changes.

Print setup

To access the Print Setup screen (shown below) from the main TN3270 screen:

1. Click **Setup** to open the TN3270 Setup menu.
2. Click **Printer**.



Print type

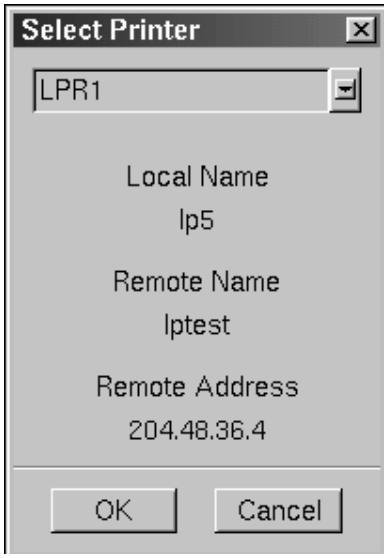
- **Screen print** – Prints the entire contents of the application window
- **Printer Type** – Specifies the printer driver to use when printing. Options are:
  - Plain
  - HP Laserjet
  - Epson Inkjet
  - Proprinter
  - Postscript

  Note: Printing options found on this configuration panel may vary depending on the printer type selected.
- **Draft** – Prints draft quality when selected. Otherwise printing is letter quality.
- **Attributes** – If selected, prints intensified characters as bold and underlined when required.
- **Portrait** – If enabled, prints in Portrait mode. If disabled, prints in Landscape mode.
- **Mod 5 17 CPI** – If selected, printing automatically changes to 17 CPI (characters per inch) if the application screen is Mod 5.
- **Wide Paper** – If enabled, allows printing of more than 80 characters per line. This setting is generally used when Proprinter is selected as the Printer Type.
- **CPI Selection** – Specifies the number of Characters Per Inch to print. Options are 10, 10.5, 12, and 17 CPI.
- **LPI Selection** – Specifies the number of Lines Per Inch to print. Options are 3, 4, 6, 8, and 8.4 LPI.
- **Lines per page** – Specifies the number of Lines per Page to print. Selectable range is 0-255.

- **Line Feed** – Sends an immediate Line Feed to the selected printer.
- **Form Feed** – Sends an immediate Form Feed to the selected printer
- **Select Printer** – Displays the printer configuration menu.

Select Printer menu

To configure LPR, select the **Select Printer** button from within the TN3270 Printer Setup Screen. The LPR Setup panel is shown below:



- **Scroll window** – Used to select a printer. A blue background indicates the printer is selected.
- **Local Name** – User-defined name of the printer.
- **Remote Name** – Queue name that print jobs are sent to from an LPR-enabled device.
- **Remote Address** – IP address of the selected printer.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Macro Record/Playback

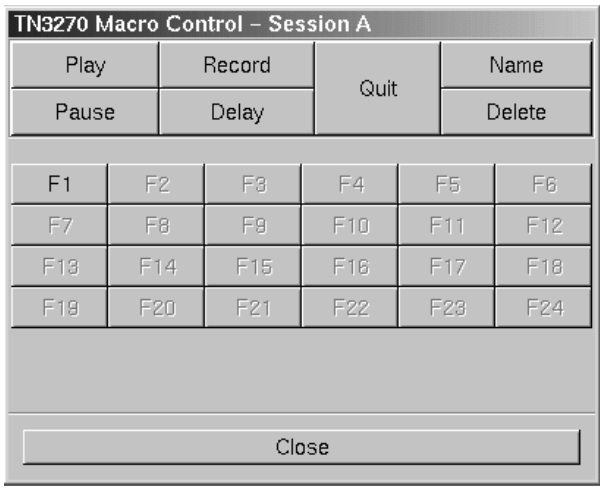
The TN3270 macro function enables you to reduce the number of keystrokes required for a frequently repeated entry such as a logon sequence. Unique keystroke sequences can be stored for each of the 24 function keys on the keyboard. The entered keystroke sequences are stored in nonvolatile memory, which means that the data is retained even if the power is turned off.

Note: There is a 7000 key limit on the length of each macro.

Recording Macros

Follow the steps below to store macros.

1. From the main TN3270 screen, click **Macro**.
2. Click **Dialog**. The macro dialog screen will appear.



3. Click **Record**. The color of the Record button will change to green, indicating that it is active.
4. Click the F# that you wish to record. That button will be highlighted, and **`R F(#): (#) ks`** will appear on the operator status row of the TN3270 screen. The **`R`** indicates Record, **`F`**(#) to show which F# was chosen for this macro and (#) **`ks`** to track how many keystrokes have been entered on this macro.
5. Type the keys to be associated with the macro.
6. Click the **Record** key again to save the macro and exit macro record mode. Press the **Quit** key to abandon the macro and exit record mode.

   Note: F# buttons that have not been associated with a macro will appear grayed out on the macro dialog screen. To confirm that a key has not been used and to avoid inadvertently recording over an existing macro, check the status line after selecting the F# key. If there is no macro associated with this key, the number of keystrokes (ks) will be displayed as 0.

Naming Macros

In addition to associating an F# to a macro, a name or short description may also be saved with each macro. To store a macro name:

1. After recording the macro, click **Name**.
2. Click the **F#** key. The Function Namer dialog box will appear.
3. Enter a name for the macro.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Playing Macros

Follow the steps below to initiate macros:

1. Click the **Play** key within the dialog box, or select **Play** from the Macro pulldown menu.
2. Click the F# key associated with the macro you wish to recall.
3. The macro will automatically be recalled.
4. The macro will automatically terminate once all keys have been played. If you desire, the macro may be terminated at any point by pressing the **Quit** key. If the key pressed to exit macro play mode was anything other than Quit, there will be a beep to notify you of the (possibly unintentional) cancellation.

Pauses and Delays

There are certain key sequences, such as a logon password, that a user may wish to exclude from a macro. At any point while recording a macro key sequence, the **Pause** key may be clicked to temporarily suspend record mode. The keystrokes from this point forward will not be recorded within the macro until macro record mode is resumed by pressing the **Record** key. The **Quit** key will abandon the macro, even while macro record is paused.

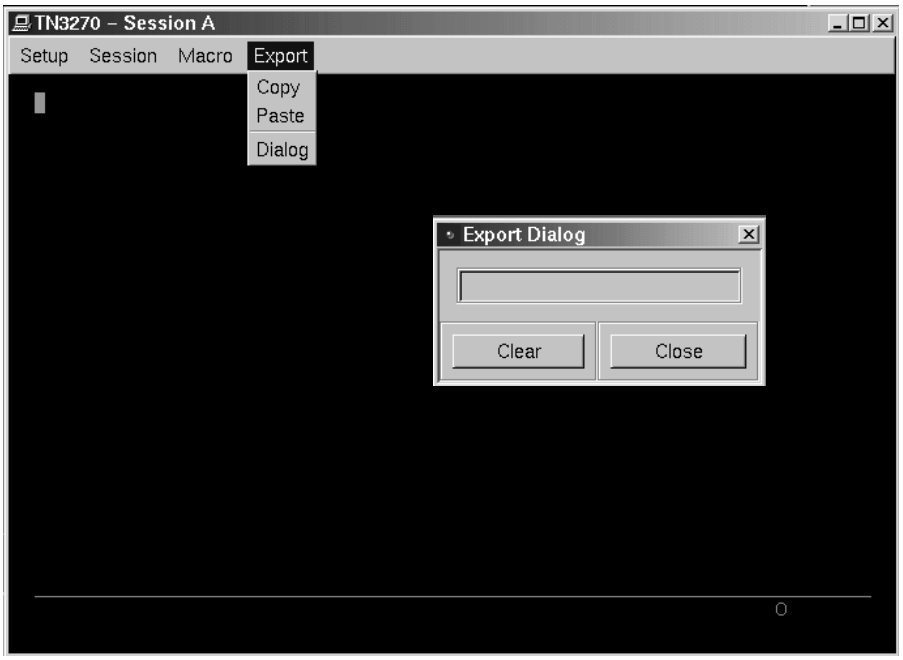
If the **Pause** key is pressed while in macro record mode, besides suspending recording, it will be embedded within the macro and cause the macro to pause automatically each time it is played back.

While playing back a macro the **Pause** key may be pressed to temporarily suspend the macro. At this point you may type in normal mode. Pressing the **Play** key will resume the macro. The **Quit** key will abandon the macro and return you to normal mode, even while macro play is paused.

If delays are desired within macros, the Delay key may be clicked while in record mode to embed an approximately one second delay within the macro. This may be clicked multiple times to extend the length of the delay.

Export

The Export feature provides a normal Copy and Paste function, plus a Dialog text box to allow manually entering data into the paste buffer.



Copy

To copy TN3270 screen data to the paste buffer, highlight the data by holding down the SHIFT key on the keyboard and the left mouse button while dragging the mouse cursor to select the data. Once the data is highlighted, click on EXPORT and COPY. The highlighting goes away to indicate the copy is complete.

Paste

The Paste function will copy the contents of the paste buffer to the screen, just as though the data was entered from the keyboard. Data will be entered on the screen beginning at the position of the screen cursor (not the mouse cursor).

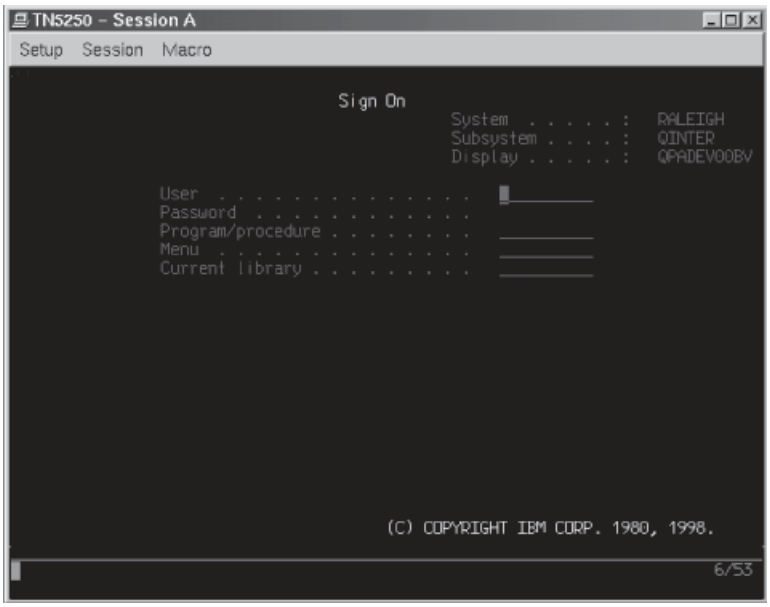
Dialog

This button brings up the EXPORT dialog text box, which allows you to manually key data into the paste buffer instead of copying it from the screen. Data that is entered in the text box is simultaneously entered into the paste buffer. Data selected with the COPY function will be copied to the paste buffer, but is not displayed in the DIALOG text box.

TN5250

What is TN5250?

Like Telnet, TN5250 enables the user to access programs running on remote hosts. TN5250 provides the means to access 5250 programs running on IBM midframes.



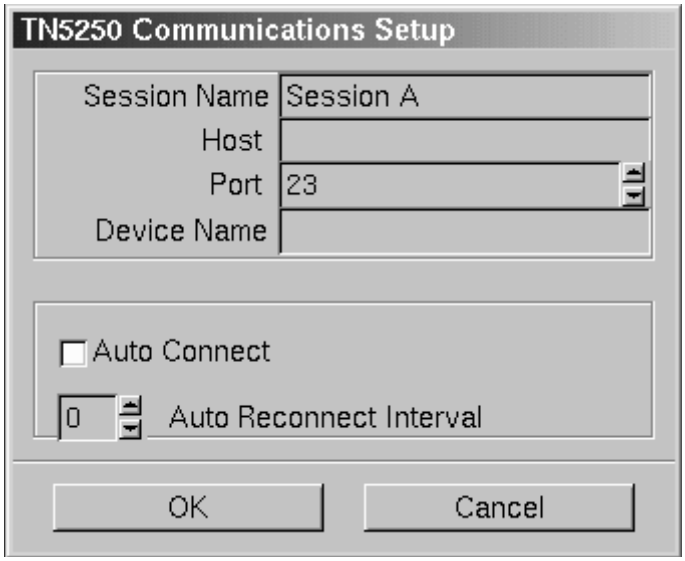
TN5250 can manipulate the entire screen image, fields and function keys, in a way identical to a 5250 terminal. TN5250 provides the following standard features:

- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.
- **Color Display** – The color monitor is programmable in seven colors.
- **Row/Column Indicator** – Displays the current cursor location on the operator status row.
- **Multiple Sessions** – A maximum of 10 sessions can be accessed with this emulator.

Setting up a remote host as a 5250 terminal

To setup a remote host:

1. Click the Start button in the lower left-hand corner of the screen. The application menu will appear.
2. Click **TN5250**. The main TN5250 screen will appear with three menu options, **Setup Session**, and **Macro**.
3. Click **Setup.**
4. Click **Communications** from the Setup menu. This screen will appear:



- **Session Name** – Enter the name to be displayed in the window title.
- **Host** – Enter the Internet address of the TN5250 server to which you wish to connect, for example, 192.168.1.1.
- **Port** – If the host requires that a port number (other than port 23) be specified when connecting, select the port number using the up and down arrows or by typing the port in directly.
- **Device Name** – Enter a name for the device or LU name.
- **Auto Connect** – Select to auto connect at program start and to reconnect automatically if disconnected by the server. Select an auto reconnect interval time for how often a reconnection attempt will be made if disconnected.

Click **OK** to save changes and close Communications Setup, or **Cancel** to close and discard any changes.

Connecting to a TN5250 session

TN5250 will connect to the remote host. The host then will normally respond with a welcome and will lead you through its log in process. Log in, employing one of the following combinations:

- With the userid and password supplied by the administrator of the host
- With just a userid (some hosts do not require passwords)
- Neither, if the remote host has been set up for it.

To connect to a TN5250 remote host from the main TN5250 screen:

1. Click **Session** to open the TN5250 Session menu.
2. Click **Connect**.

Once connected, use the menus, commands and features of the remote host to access and run 5250 applications.

Logging out of a remote host

1. When you have finished using the remote host, use the host's normal log out command.
2. To disconnect from the host, select **Disconnect** from the **Session** menu.

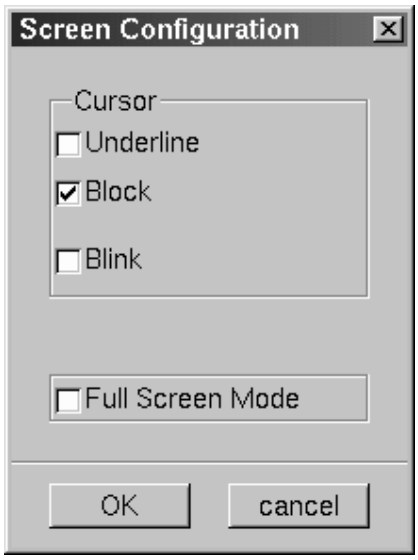
Configuring TN5250 for an application

TN5250 can be configured for a particular application by selecting **Screen**, **Keyboard, Color,** or **Printer** from the Setup menu.

Screen setup

From the main TN5250 application screen:

1. Click **Setup** to open the TN5250 Setup menu.
2. Click **Screen**.



- **Cursor** – Choose either an underline cursor or a block cursor. Select **Blink** for a blinking cursor.
- **Full Screen Mode** – Select to open the TN5250 application in Full Screen Mode. TN5250 must be closed and reopened for this setting to become effective.

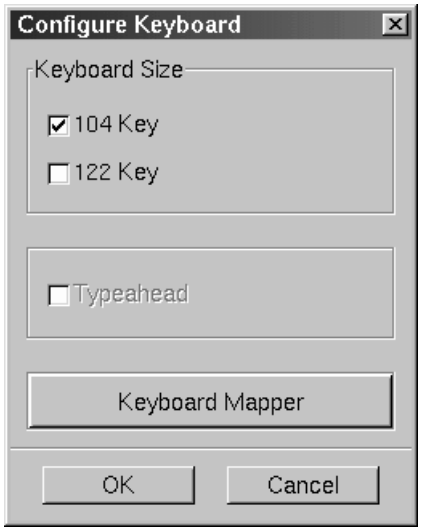
  Note: To access the taskbar or minimized applications on the taskbar while Full Screen Mode is in effect, hold down the **Shift** and **Alt** keys while pressing the tab key. Press the tab key repeatedly until the name of the application you wish to bring to the front is displayed. To access the setup menu from full screen mode, press **Alt-Shift-S**.

Click **OK** to save changes and close Screen Setup, or **Cancel** to close and ignore any changes.

Keyboard setup

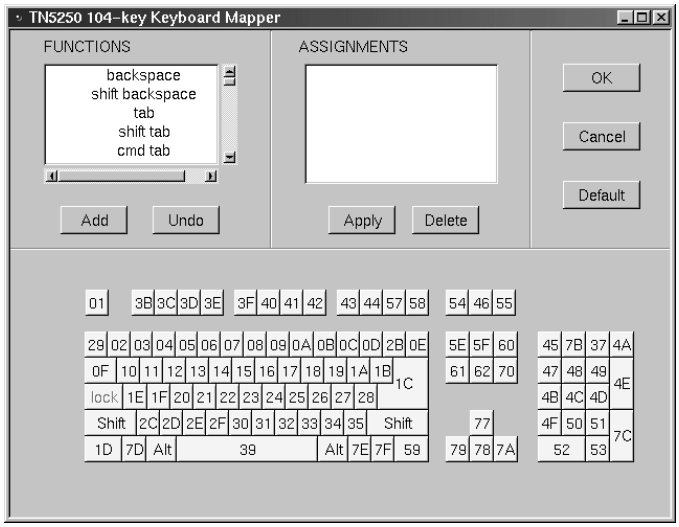
From the main TN5250 application screen:

1. Click **Setup** to open the TN5250 Setup menu.
2. Click **Keyboard**.

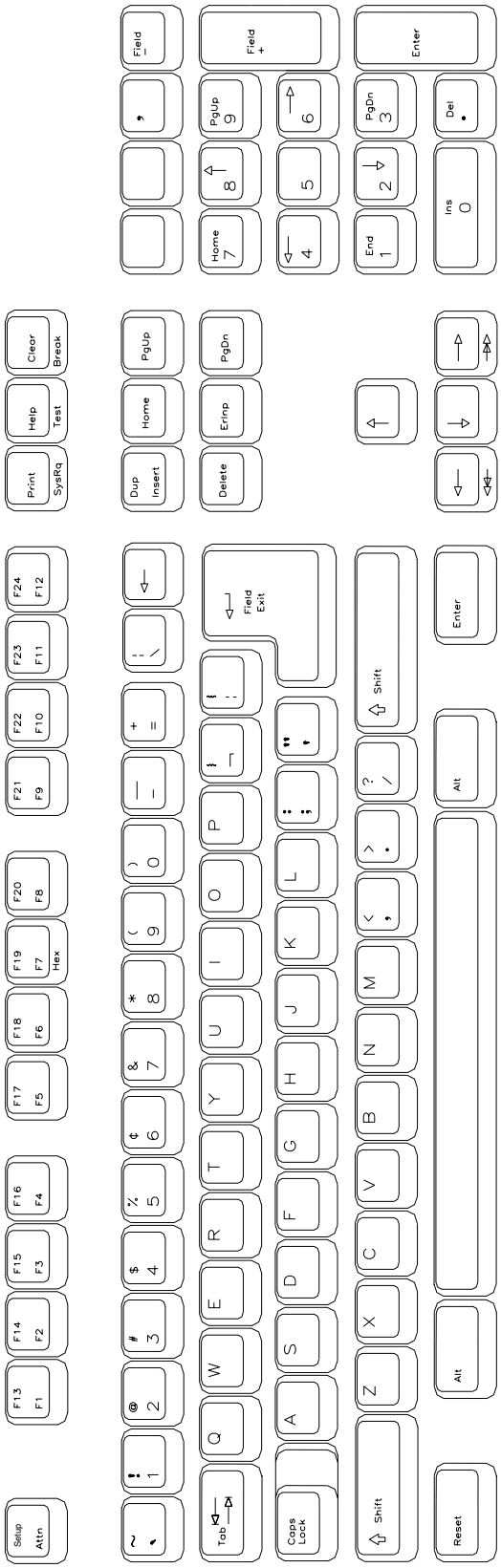


- **Keyboard Size** – Select either 104 or 122-key keyboard.
- **Typeahead** – Enable the Typeahead feature.
- **Keyboard Mapper** – The key assignment (mapping) may be verified or changed as necessary for use in TN5250 applications.

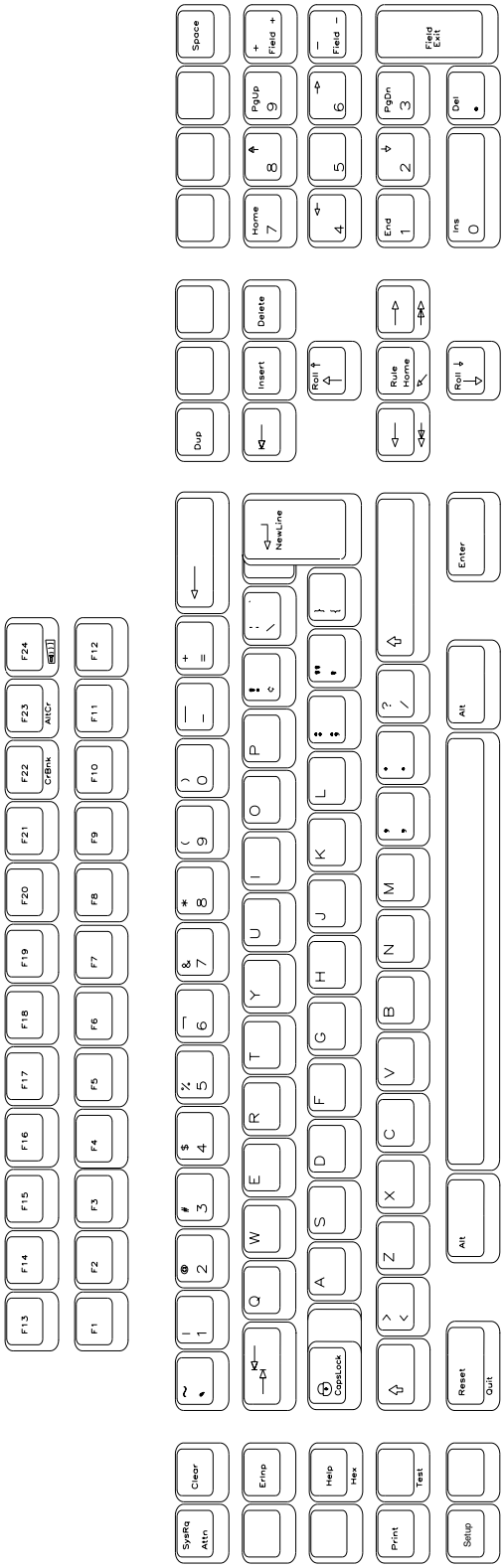
Keyboard Mapper



To determine which key is currently assigned to the key, click the appropriate key in the Functions box and the assigned value will be displayed in the Assignments box.



TN5250
104-key Keyboard Layout



TN5250
122-key Keyboard Layout

Alternatively, on the keyboard layout, using the mouse click on the key to which the value needs to be displayed, the key will be displayed in the Functions box and the assigned value in the Assignments box.

To change the key assignment:

1. Using the mouse, click on the key that needs to be changed on the keyboard layout or alternatively, choose the function from the Functions box.
2. Click **Add** below the Functions box.
3. Assign the new assignment required for the key selected. If a key combination is desired, click either the **Shift**, **Control**, or **Shift + Control** buttons.
4. Click **Apply** when satisfied with selection or click **Undo** to reassign.

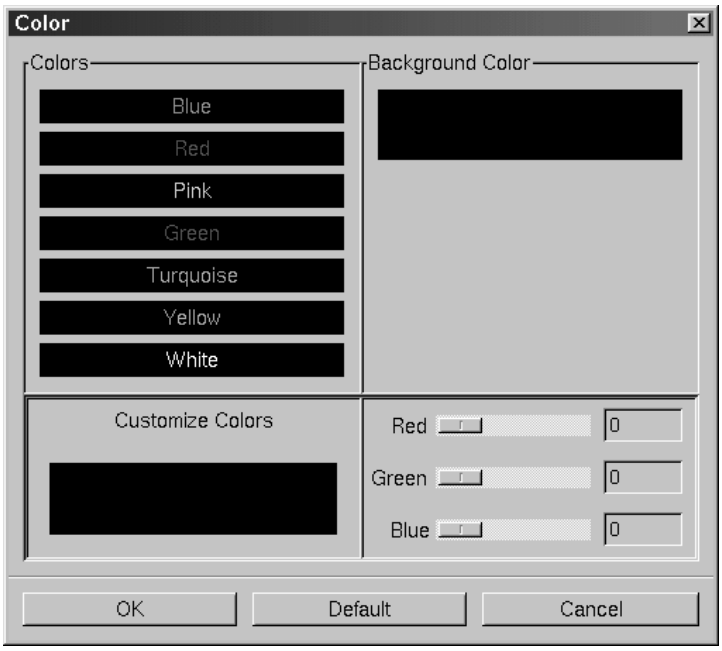
   Note: A function can be applied to multiple keys. Assigning a function to a key does not unassign it from a previous definition.
5. Click **OK** to save changes and Exit, or **Cancel** to discard changes and exit. To return the key assignments to their default state, click **Default**.

   Note: TN5250 application must be closed and restarted for changes to become effective.

Color Setup

From the main TN5250 application screen:

1. Click **Setup** to open the TN5250 Setup screen.
2. Click **Colors**.



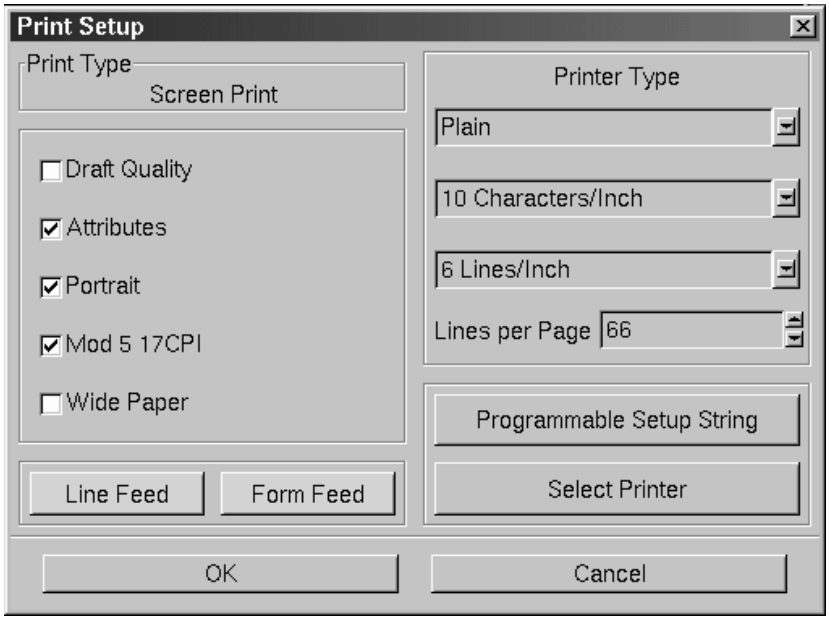
3. Select a color from the Colors list or Background Color. Use any or all of the three slider bars to adjust the selected color.

Click **OK** to save changes and close Color Setup, or **Cancel** to close and discard any changes.

Print setup

To access the Print Setup screen from the main TN5250 screen:

1. Click **Setup** to open the TN5250 Setup menu.
2. Click **Printer**.



Print type

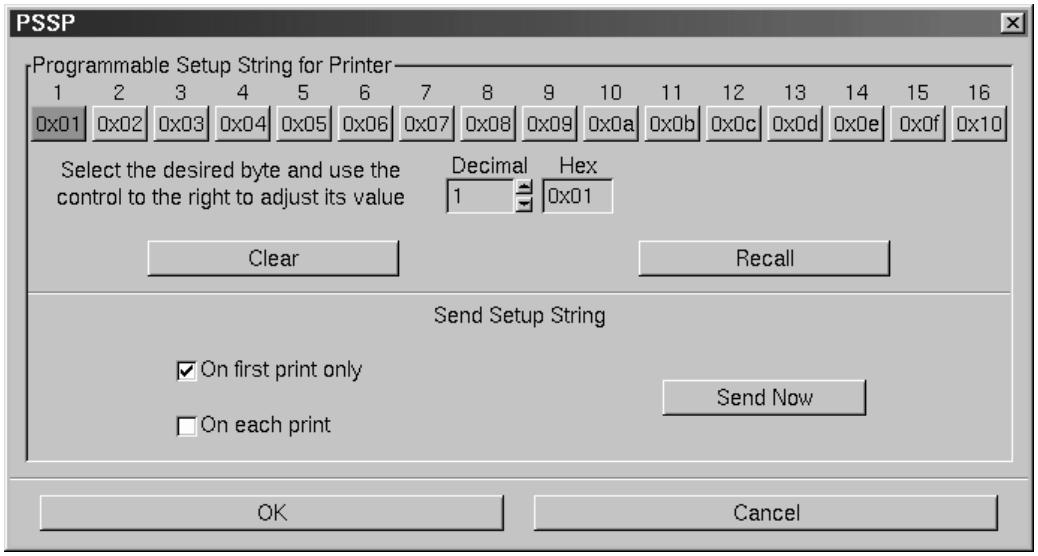
- **Screen print** – Prints the entire contents of the application window
- **Printer Type** – Specifies the printer driver to use when printing. Options are:
  - Plain
  - HP Laserjet
  - Epson Inkjet
  - Proprinter
  - Postscript

  Note: Printing options found on this configuration panel may vary depending on the printer type selected.
- **Draft** – Prints draft quality when selected. Otherwise printing is letter quality.
- **Attributes** – If selected, prints intensified characters as bold and underlined when required.
- **Portrait** – If enabled, prints in Portrait mode. If disabled, prints in Landscape mode.
- **Mod 5 17 CPI** – If selected, printing automatically changes to 17 CPI (characters per inch) if the application screen is Mod 5.
- **Wide Paper** – If enabled, allows printing of more than 80 characters per line. This setting is generally used when Proprinter is selected as the Printer Type.
- **CPI Selection** – Specifies the number of Characters Per Inch to print. Options are 10, 10.5, 12, and 17 CPI.
- **LPI Selection** – Specifies the number of Lines Per Inch to print. Options are 3, 4, 6, 8, and 8.4 LPI.

- **Lines per page** – Specifies the number of Lines per Page to print. Selectable range is 0-255.
- **Line Feed** – Sends an immediate Line Feed to the selected printer.
- **Form Feed** – Sends an immediate Form Feed to the selected printer.
- **Programmable Setup String** – Displays Programmable Setup String for Printer menu.

PSSP

Programmable Setup String for Printer menu provides a mechanism for the user to send a 16 byte string to the selected printer (locally attached or lpr). This could be used to select an alternate font or paper source - the capabilities are printer dependent and usually detailed in your printer manual.



On entry to the menu the currently stored string is displayed, one byte per cell. The 8-bit values in each cell can be altered either by directly keying a new hexadecimal value into the cell or using the scroll buttons provided.

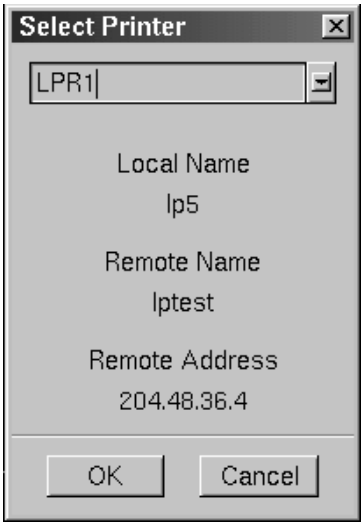
- **Clear –** Set all values to 0.
- **Recall –** Redisplay the currently stored values.
- **On first print only –** The string is sent only on the first print since the current TN5250 session was started.
- **On each print –** The string will precede each print sent from the TN5250 session.
- **Send Now –** Sends the string immediately.

  Click **OK** to save changes and exit, or **Cancel** to discard any changes and exit.

- **Select Printer** – Displays the printer configuration menu.

Select Printer menu

To configure LPR, select the **Select Printer** button from within the TN5250 Printer Setup Screen. The LPR Setup panel is shown below:



- **LPR scroll window** – Used to select a printer. A blue background indicates the printer is selected.
- **Local Name** – User-defined name of the printer.
- **Remote Name** – Queue name that print jobs are sent to from an LPR-enabled device.
- **Remote Address** – IP address of the selected printer.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Macro Record/Playback

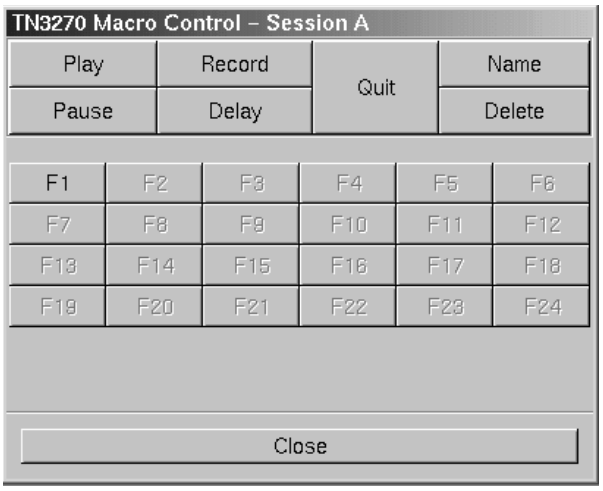
The TN5250 macro function enables you to reduce the number of keystrokes required for a frequently repeated entry such as a logon sequence. Unique keystroke sequences can be stored for each of the 24 function keys on the keyboard. The entered keystroke sequences are stored in nonvolatile memory, which means that the data is retained even if the power is turned off.

Note: There is a 7000 key limit on the length of each macro.

Recording Macros

Follow the steps below to store macros.

1. From the main TN5250 screen, click **Macro**.
2. Click **Dialog**. The macro dialog screen will appear.



3. Click **Record**. The color of the Record button will change to green, indicating that it is active.
4. Click the F# that you wish to record. That button will be highlighted, and **`R F(#): (#) ks`** will appear on the operator status row of the TN5250 screen. The **`R`** indicates Record, **`F`**(#) to show which F# was chosen for this macro and (#) **`ks`** to track how many keystrokes have been entered on this macro.
5. Type the keys to be associated with the macro.
6. Click the **Record** key again to save the macro and exit macro record mode. Press the **Quit** key to abandon the macro and exit record mode.

   Note: F# buttons that have not been associated with a macro will appear grayed out on the macro dialog screen. To confirm that a key has not been used and to avoid inadvertently recording over an existing macro, check the status line after selecting the F# key. If there is no macro associated with this key, the number of keystrokes (ks) will be displayed as 0.

Naming Macros

In addition to associating an F# to a macro, a name or short description may also be saved with each macro. To store a macro name:

1. After recording the macro, click **Name**.
2. Click the **F#** key. The Function Namer dialog box will appear.
3. Enter a name for the macro.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Playing Macros

Follow the steps below to initiate macros:

1. Click the **Play** key within the dialog box, or select **Play** from the Macro pulldown menu.
2. Click the F# key associated with the macro you wish to recall.
3. The macro will automatically be recalled.
4. The macro will automatically terminate once all keys have been played. If you desire, the macro may be terminated at any point by pressing the **Quit** key. If the key pressed to exit macro play mode was anything other than Quit, there will be a beep to notify you of the (possibly unintentional) cancellation.

Pauses and Delays

There are certain key sequences, such as a logon password, that a user may wish to exclude from a macro. At any point while recording a macro key sequence, the **Pause** key may be clicked to temporarily suspend record mode. The keystrokes from this point forward will not be recorded within the macro until macro record mode is resumed by pressing the **Record** key. The **Quit** key will abandon the macro, even while macro record is paused.

If the **Pause** key is pressed while in macro record mode, besides suspending recording, it will be embedded within the macro and cause the macro to pause automatically each time it is played back.

While playing back a macro the **Pause** key may be pressed to temporarily suspend the macro. At this point you may type in normal mode. Pressing the **Play** key will resume the macro. The **Quit** key will abandon the macro and return you to normal mode, even while macro play is paused.

If delays are desired within macros, the Delay key may be clicked while in record mode to embed an approximately one second delay within the macro. This may be clicked multiple times to extend the length of the delay.

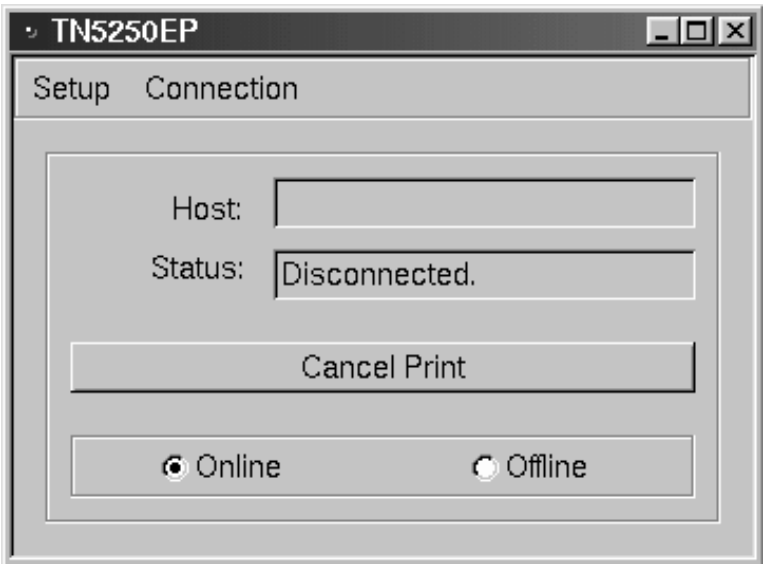
TN5250EP

The TN5250EP Printer application in the iCON supports two types of printing on the AS/400:

- **HPT** – Host Print Transform (HPT) is an OS/400 function that converts an AS/400 spool file into an ASCII printer data stream. The actual conversion of the spool file takes place on the AS/400 using printer drivers provided by IBM.
- **ASCII Pass Thru** – This function allows an application to embed ASCII control characters within a normal EBCDIC spool file. Processing of the spool file takes place on the iCON.

Note: Only PCL5 printers are supported when using this function on the iCON.

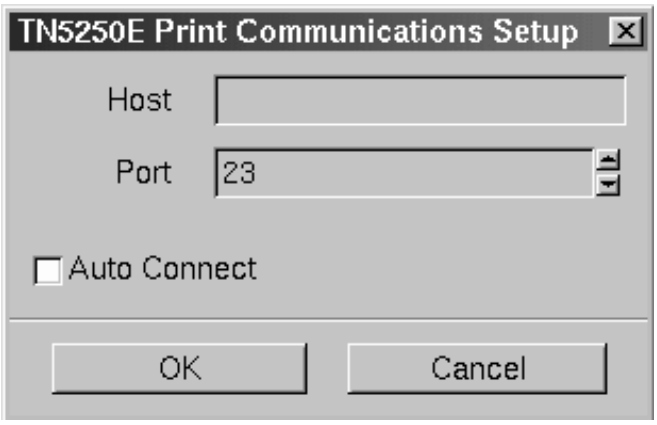
This is the window displayed for a TN5250EP session. It provides some information and control of the session.



- **Host** – Displays the IP address or DNS (Domain Name Service) name of the AS/400 with which a printer session is to be established.
- **Status** – Indicates the status of the connection of the printer session to the AS/400. Status examples are: **Connection established; Session successfully started; Ready for print data; Processing print data; Disconnected**.
- **Cancel Print** – Clicking on this button while the iCON is receiving an AS/400 print job, stops printing after a “Cancel Print” message is sent to the AS/400. Depending on the size of the buffer memory in the printer, printing may continue until the printer’s buffer is empty.
- **Online/Offline** – These checkboxes simulate the Online/Offline button on a printer.

Setup

Communications



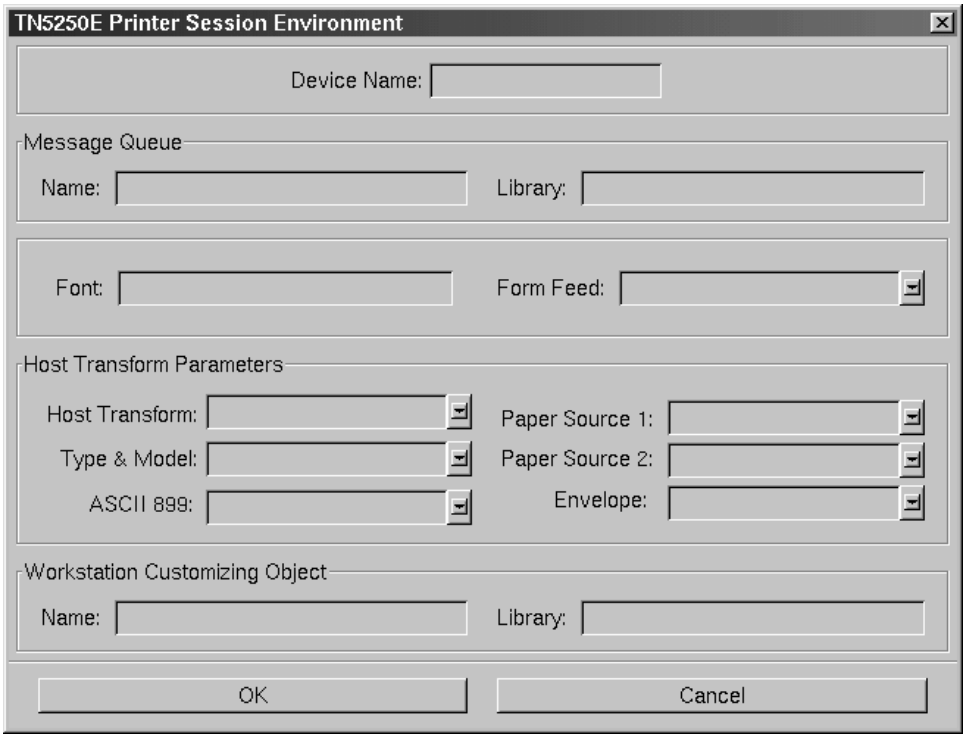
- **Host** – Enter the IP address or DNS (Domain Name Service) name of the AS/400 with which a printer session is to be established.
- **Port** – Specifies the host port that the Telnet session should use. The default is 23.
- **Auto Connect** – Enabling this checkbox will establish a printer session with the AS/400 when the TN5250EP application is run from the Visara Start menu.

Printer

- **Scroll window** – Used to select a printer. A blue background indicates the printer is selected.
- **Local Name** – User-defined name of the printer.
- **Remote Name** – Queue name that print jobs are sent to from an LPR-enabled device.
- **IP Address** – IP address of the selected printer.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Environment



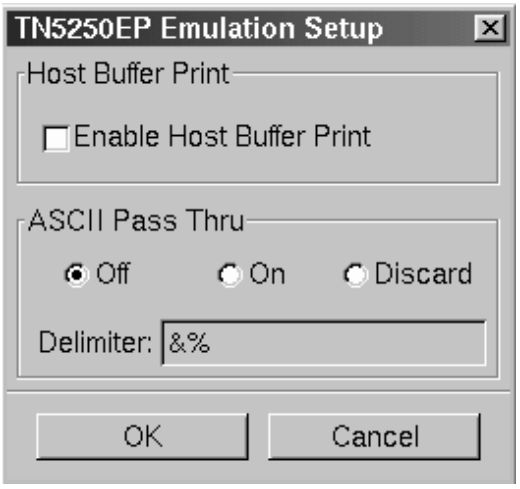
Once the settings are entered correctly in this window, the TN5250E printing will be automatically configured on the AS/400 system. OS/400 versions prior to V4R3 may require certain PTFs.

Check with IBM to determine what AS/400 PTFs you may require to support TN5250E printing. Some fields are required as defined below:

- **Device Name** – This field entry is not required. The name is arbitrary but must be unique. The name will usually be supplied by the System Administrator.
- **Message Queue** – Not required. This field will identify the message queue where operational messages are sent.
- **Font** – This field entry is required. The default value is 11.
- **Form Feed** – Not required. Identifies the type of forms used.
- **Host Transform** – This field entry is required. The default value is *YES. If the AS/400 application is to create ASCII Pass Thru data (SCS mode), then select *NO.
- **Type and Model** – This field is required. This field identifies the attached printer type. If your printer type is not listed use a printer type with a compatible printer command set. The other fields are not required.

  Note: If the Host Transform parameter is set to *NO, then this field does NOT apply.
- **ASCII 899** – Not required. If the attached printer supports ASCII code page 899 (used for OfficeVision/400 symbols), then select *YES.
- **Workstation Customizing Object** – Not required. Allows customization of the printer command stream.

Emulation



- **Enable Host Buffer Print** – Enabling this checkbox will output a formatted printout with hex codes on the left column and the translated characters on the right column.
- **ASCII Pass Thru** – This feature will enable the AS/400 application to activate specific printer functions. During normal print mode, the iCON converts the SCS data stream from the AS/400 into ASCII printer control codes and printable characters. When the iCON detects the Pass Thru delimiter characters, it stops converting the SCS data stream and starts "passing thru" the embedded printer control codes to the printer. This continues until the Pass Thru delimiter characters are detected.

  Note: This feature will only be enabled if the Host Transform entry is set to *NO in the iCON Environment setup screen.

  – **Off** – Turn off ASCII Pass Thru. Do not check data stream for delimiters.

  – **On** – Turn on ASCII Pass Thru (APT). Check data stream for delimiters and discard them, interpret APT characters and pass them to the printer.

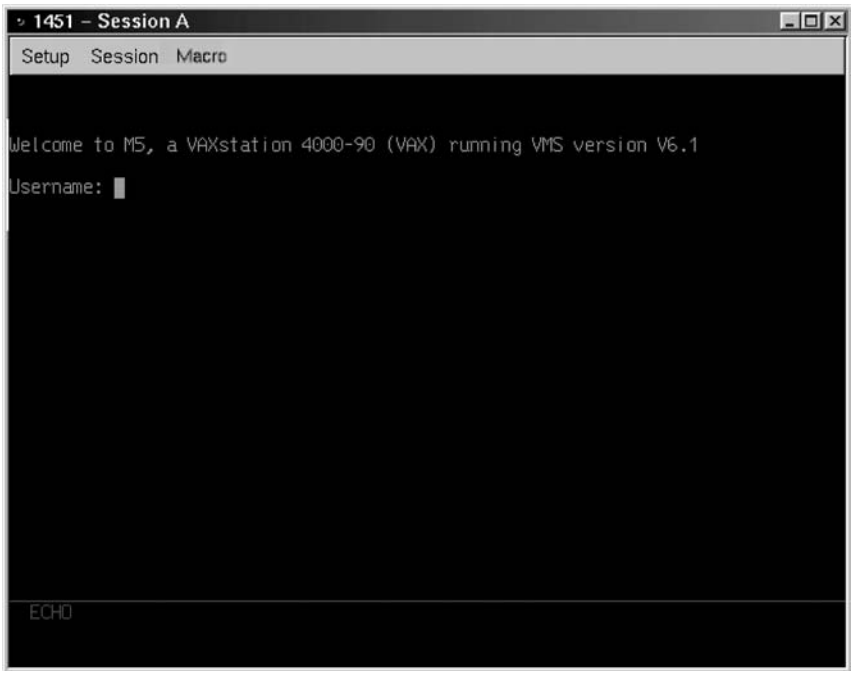
  – **Discard** – Check data stream for delimiters and discard them, interpret APT characters and discard them. Used for troubleshooting.

  – **Delimiter** – Enter two EBCDIC characters that will be used to Start/Stop ASCII Pass Thru.

1451

What is 1451?

Like Telnet, 1451 enables you to access programs running on remote hosts.

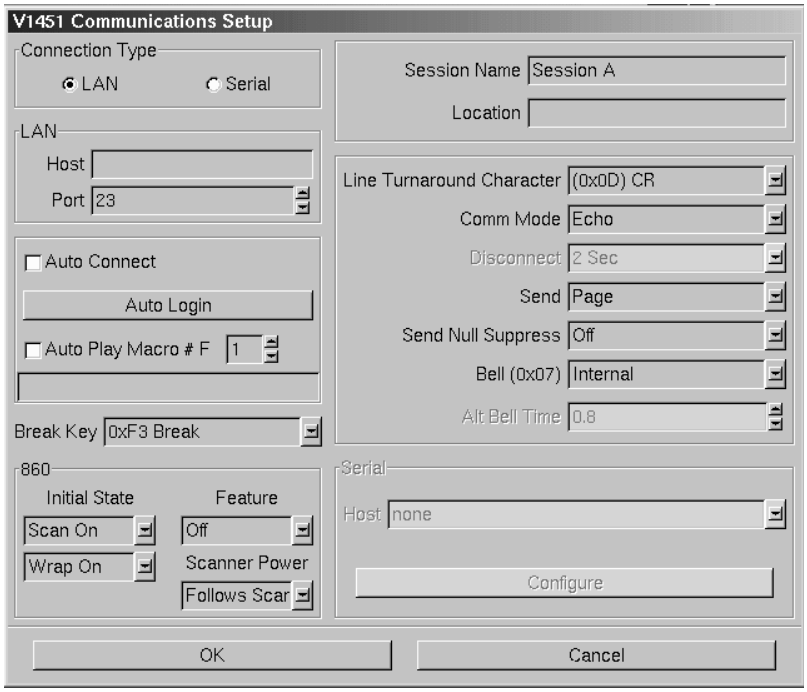


1451 enables the iCON to function as though it were a standard 3151 display. 1451 provides the following standard features:

- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.
- **Color Display** – The color monitor is programmable.
- **Multiple Sessions** – A maximum of 10 sessions can be accessed with this emulator.

Setting up 1451

1. Click the Start button located in the lower left corner of the screen.
2. Select **Program** from the pop-up menu.
3. Select **Emulators** from the next pop-up menu.
4. Click on the **1451** entry.
5. Select **Communications** from the Setup menu.



- **Connection Type –** Select either a LAN or Serial connection.
- **LAN**
  - **Host –** Enter the Internet address of the 1451 server to which you wish to connect, for example, 192.168.1.1.
  - **Port –** If the host requires that a port number (other than port 23) be specified when connecting, select the port number using the up and down arrows or by typing the port in directly.
- **Auto Connect** – Select to auto connect at program start-up.
- **Auto Login** – Select to enable and configure auto login on connect.
- **Auto Play Macro** – Select the F# associated with the macro that should play upon connection. The name of the macro (if previously named) will appear in the window below the checkbox.
- **Break Key –** Selects command sent for BreakKey function when using LAN connection.
- **Initial State**
  - **Scan On/Off/Once –** Allows selection of how serial input data is handled when emulator is started.

- **Feature On/Off –** Used to control serial port (com 3) usage with an alternate data input device. (Serial bar code scanner, MICR scanner, Mag Stripe reader)
- **Session Name –** Enter the name to be displayed in the window title.
- **Line Turnaround Character –** Allows selection of either ETX(0x03), EOT(0x04), CR(0x0D), or DC3(0x13) as line turn around characters.
- **Comm Mode –** Will allow selection of Character Mode, Echo Mode or Local.
- **Disconnect –** Selects either 60mSec or 2 sec.
- **Send –** Effects function of Send Key...either Current Line or Current Page.
- **Send Null Suppress –** Selection On or Off...Controls suppression of transmission of trailing null characters online.
- **Bell (0x07) –** Select Internal/External/Alt 1/Alt 2 for alarm.
- **Serial**
  - **Host** – Enter a new host name or select from the drop-down list.
  - **Configure –** Select to display the Serial Communications Configuration Panel.

  Enter the Baud rate, parity, data bits and stop bits for the serial connection.

Click **OK** to save changes and close Communications Setup, or **Cancel** to close and discard any changes.

Connecting to a 1451 session

1451 will connect to the remote host. The host then will normally respond with a welcome and will lead you through its log in process. Log in, employing one of the following combinations:

- With the userid and password supplied by the administrator of the host
- With just a userid (some hosts do not require passwords)
- Neither, if the remote host has been set up for it.

To connect to a 1451 remote host from the main 1451 screen:

1. Click **Session** to open the 1451 Session menu.
2. Click **Connect**.

Once connected, use the menus, commands and features of the remote host to access and run 1451 applications.

Logging out of a remote host

1. When you have finished using the remote host, use the host's normal log out command.
2. To disconnect from the host, select **Disconnect** from the **Session** menu.

Configuring 1451 for an application

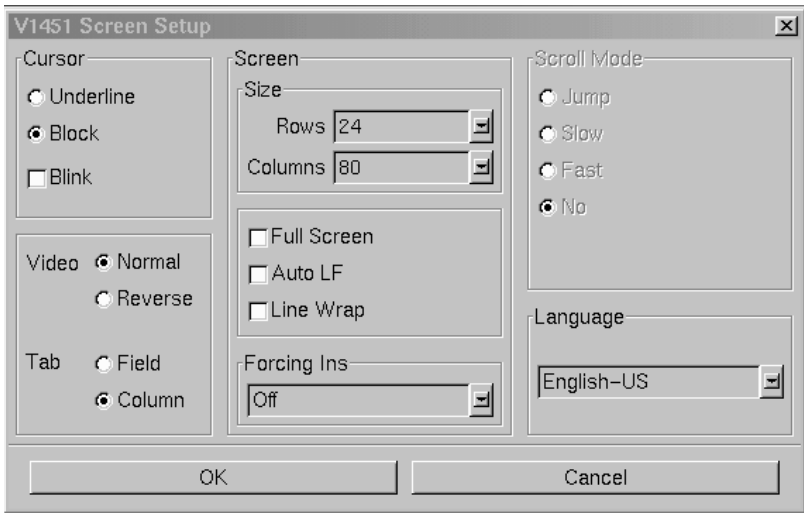
1451 can be configured for a particular application by selecting **Screen**, **Keyboard** or **Color** from the Setup menu.

Screen setup

From the main 1451 application screen:

1. Click **Setup** to open the 1451 Setup menu.

Note: When in full screen mode or when using a keyboard only (no mouse), the Setup menu may be accessed with **Alt-Shift-S**.



2. Click **Screen**.

- **Cursor –** Choose either an underline cursor or a block cursor. Select **Blink** for a blinking cursor.
- **Full Screen Mode –** Select to open the 1451 application in Full Screen Mode. 1451 must be closed and reopened for this setting to become effective.

  Note: To access the taskbar or minimized applications on the taskbar while Full Screen Mode is in effect, hold down the **Shift** and **Alt** keys while pressing the **tab** key. Press the tab key repeatedly until the name of the application you wish to bring to the front is displayed.
  To access the setup menu from full screen mode, press **Alt-Shift-S**.

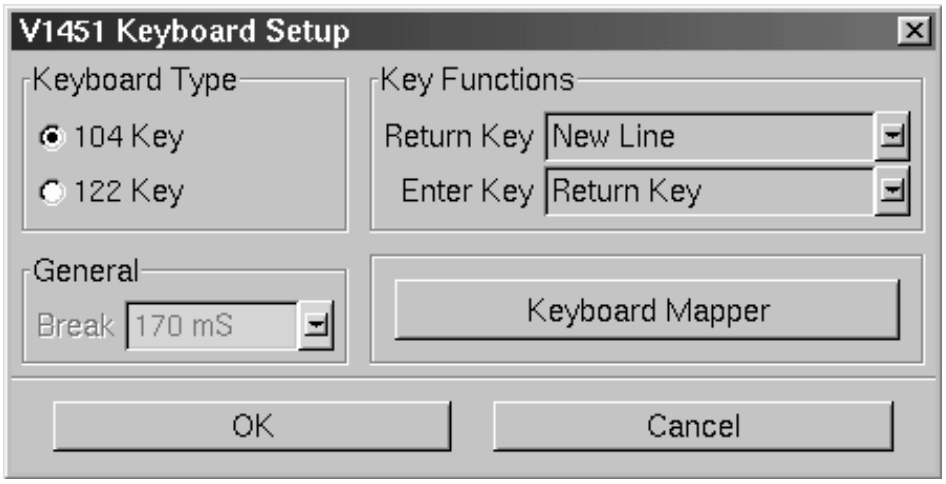
- **Forcing Insert –** Allows selection from the following:
  - **Off –** Doesn't allow a character or line insert if there's no room.
  - **Character –** Will delete the last character in the line or field to make room for a character.
  - **Line –** Will delete the last line on screen or up to next field to insert a blank line.
  - **Both –** Will delete last character or line to allow insert of character or blank line.
- **Language –** Allows selection of either English-US or Portuguese.

Click **OK** to save changes and close Screen Setup, or **Cancel** to close and discard any changes.

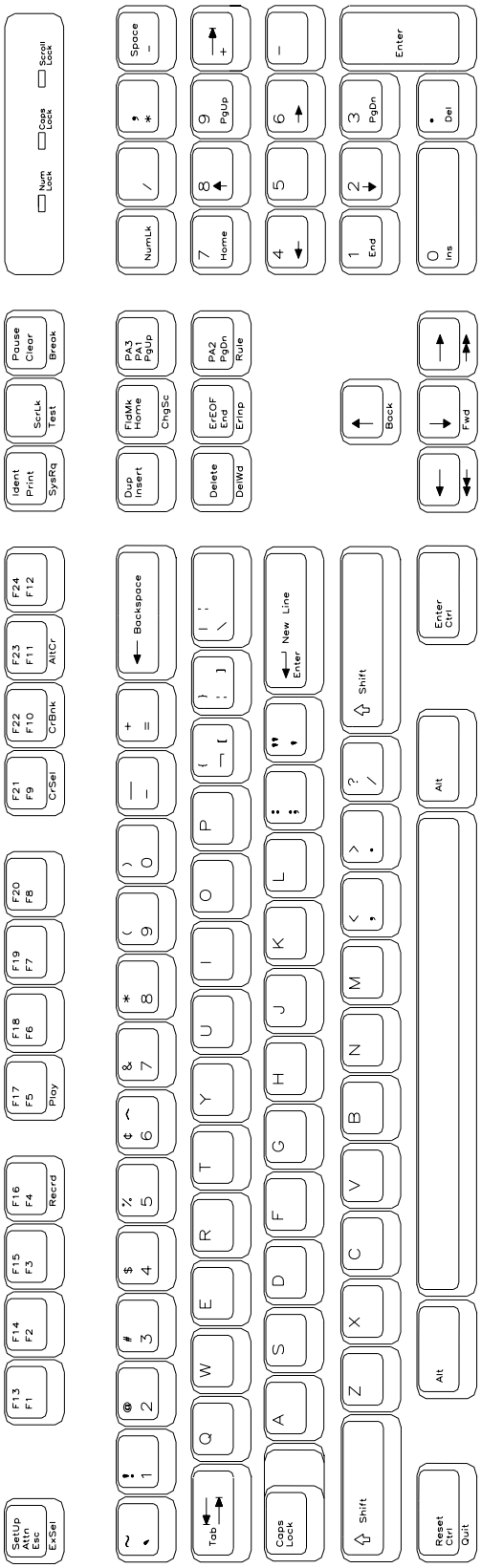
Keyboard setup

From the main 1451 application screen:

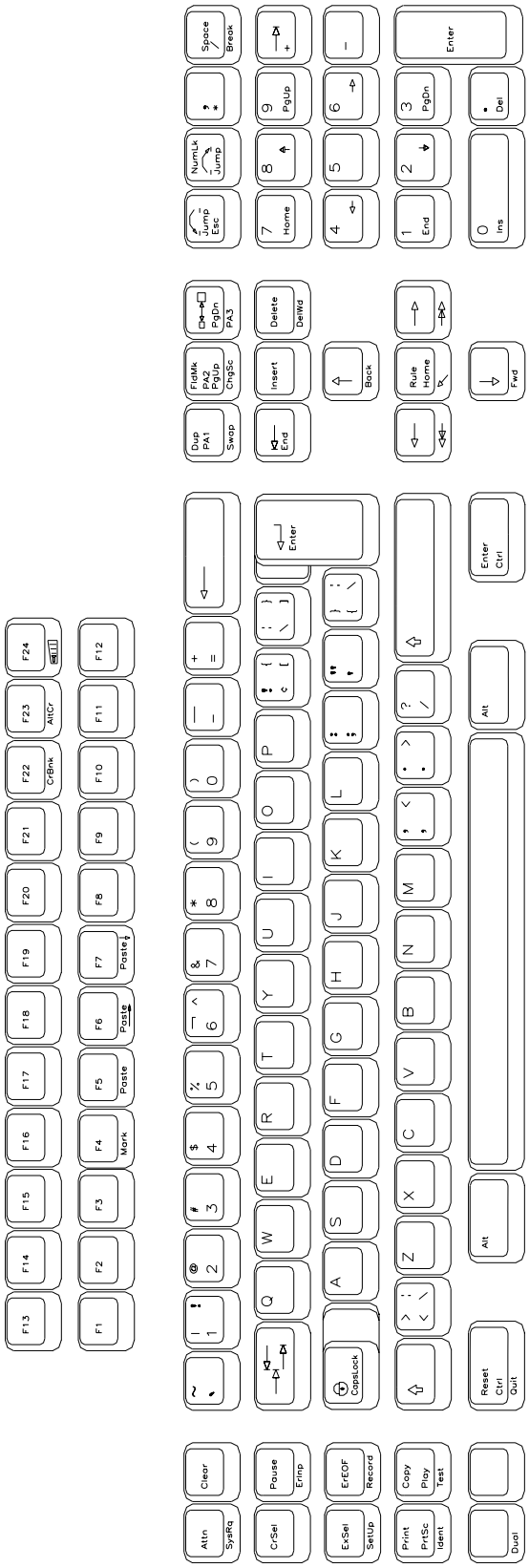
1. Click **Setup** to open the 1451 Setup menu.
2. Click **Keyboard**.



- **Keyboard Type –** Select either 104 or 122-key keyboard.
- **Return Key –** Defines function of return key (above right shift) to equal New Line or Field
- **Enter Key –** Defines numeric pad enter key to equal Return Key or Send Key
- **Key Mapper** – The key assignment (mapping) may be verified or changed as necessary for use in TN3270 applications.

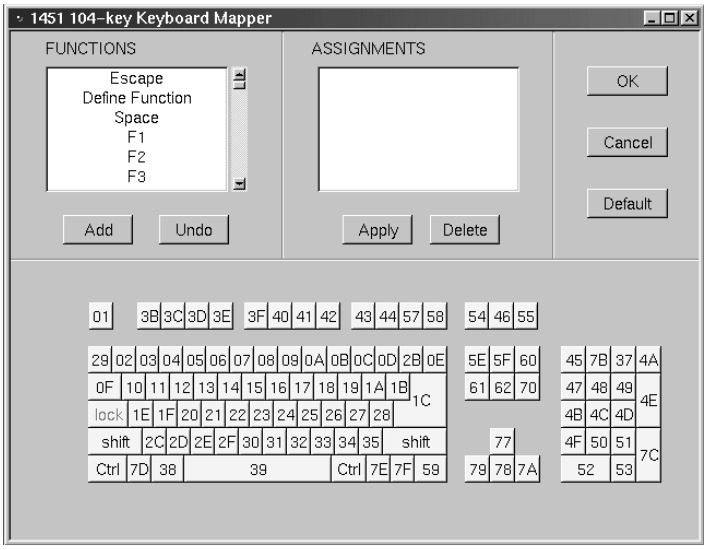


1451
104-key Keyboard Layout



1451
122-key Keyboard Layout

Keyboard Mapper



To determine which key is currently assigned to the key, click the appropriate key in the Functions box and the assigned value will be displayed in the Assignments box. Alternatively, on the keyboard layout, using the mouse click on the key to which the value needs to be displayed, the key will be displayed in the Functions box and the assigned value in the Assignments box.

To change the key assignment:

1. Using the mouse, click on the key that needs to be changed on the keyboard layout or alternatively, choose the function from the Functions box.
2. Click **Add** below the Functions box.
3. Assign the new assignment required for the key selected. If a key combination is desired, click either the **Shift**, **Control**, or **Shift + Control** buttons.
4. Click **Apply** when satisfied with selection or click **Undo** to reassign.

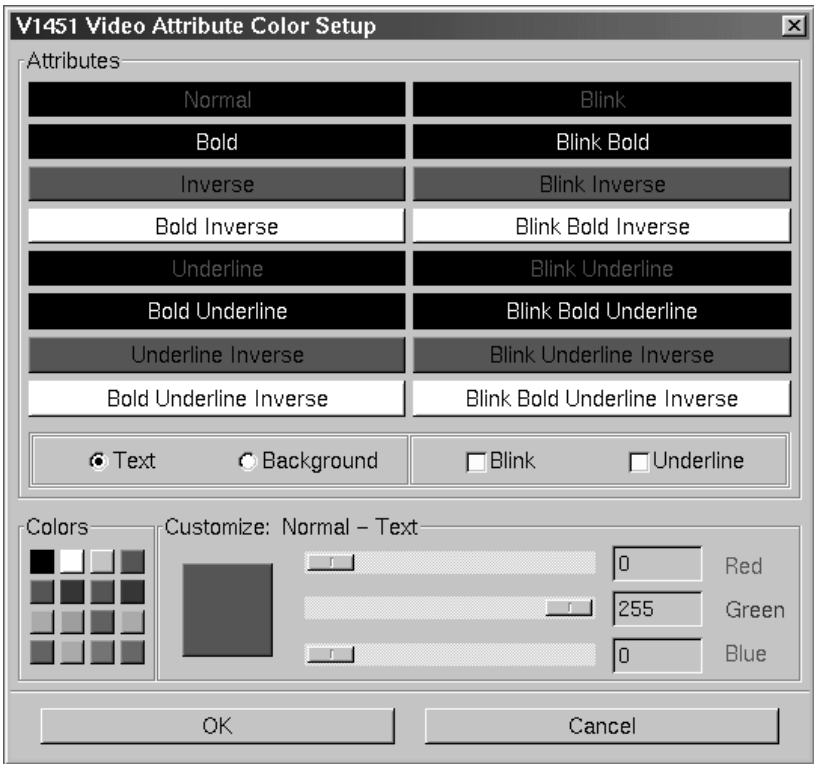
   Note: A function can be applied to multiple keys. Assigning a function to a key does not unassign it from a previous definition.
5. Click **OK** to save changes and Exit, or **Cancel** to discard changes and exit. To return the key assignments to their default state, click **Default**.

   Note: 1451 application must be closed and restarted for changes to become effective.

Color setup

From the main 1451 application screen:

1. Click **Setup** to open the 1451 Setup screen.
2. Click **Colors**.



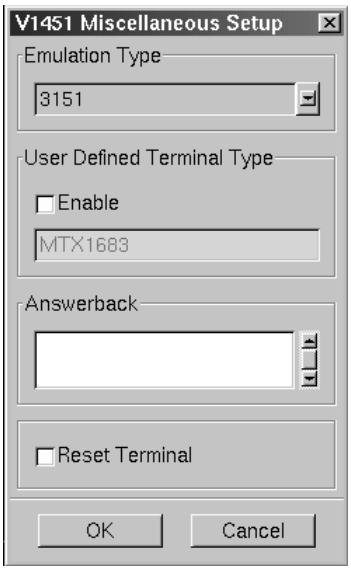
To change the text or background color in 1451 applications:

1. Click either the **Text** or **Background** button.
2. Click the Attribute to be changed. The current color will appear in the Customize box.
3. Change the color by clicking one of the 16 color blocks, or customize the color by using the sliders. The colors in the attribute block will change accordingly.
4. Click **Blink** and/or **Underline** to apply to the selected attribute.
5. Click **OK** to save changes and exit, or **Cancel** to discard changes and exit.

Miscellaneous setup

From the main 1451 application screen:

1. Click **Setup**.
2. Click **Miscellaneous**. The 1451 Miscellaneous Setup screen is shown below:



- **Emulation Type –** Displays emulation type to be used (only 3151 currently supported).
- **User Defined Terminal Type –** Terminal type string sent to the host.
- **ANSWERBACK –** Enter the Answerback string.
- **RESET Terminal –** Select to reset the Emulator.

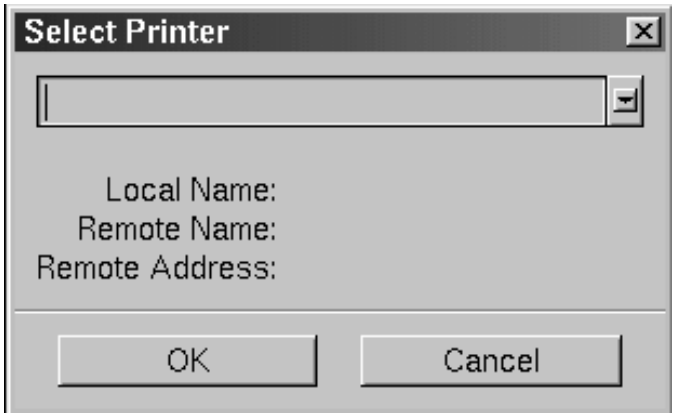
3. Click **OK** to save changes and exit, or **Cancel** to discard changes and exit.

Printer setup

From the main 1451 application screen:

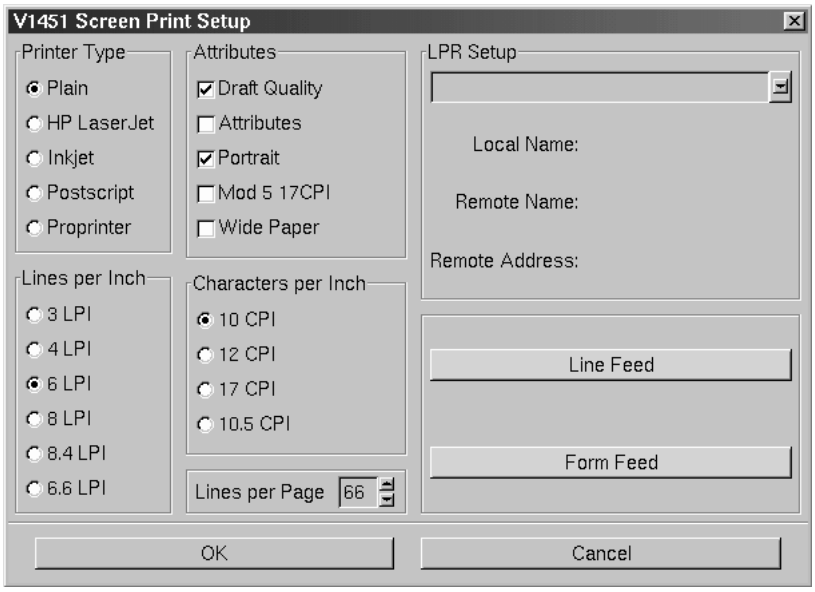
1. Click **Setup**.
2. Click **Printer**.
3. Select **Host Print** or **Screen Print**.

Host Print



Select the appropriate printer from the list of configured LPR printers.

Screen Print



- **Printer Type –** Specifies the printer driver to use when printing.
- **Lines per Inch –** Specifies the number of Lines Per Inch to print.
- **Characters per Inch –** Specifies the number of Characters Per Inch to print.
- **Lines per page –** Specifies the number of Lines per Page to print. Selectable range is 0-255.
- **Draft Quality –** Prints draft quality when selected. Otherwise printing is letter quality.
- **Attributes –** If selected, prints intensified characters as bold and underlined when required.

- **Portrait –** If enabled, prints in Portrait mode. If disabled, prints in Landscape mode.
- **Mod 5 17 CPI –** If selected, printing automatically changes to 17 CPI (characters per inch) if the application screen is Mod 5.
- **Wide Paper –** If enabled, allows printing of more than 80 characters per line. This setting is generally used when Proprinter is selected as the Printer Type.
- **LPR Setup**
  - **LPR Printer Window** – Select the defined printer that will receive 1451 print jobs. Once selected, the Local Name, Remote Name, and Remote Address will be displayed below the LPR Printer Window.
- **Line Feed –** Sends an immediate Line Feed to the selected printer.
- **Form Feed –** Sends an immediate Form Feed to the selected printer

About

From the main 1451 screen:

1. Click **Setup**.
2. Click **About**.

A dialogue box will appear displaying the version of the 1451 installed and the copyright notice.

Macro Record/Playback

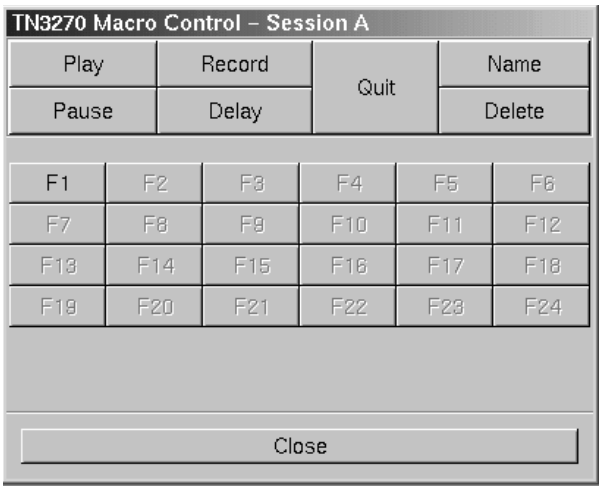
The 1451 macro function enables you to reduce the number of keystrokes required for a frequently repeated entry such as a logon sequence. Unique keystroke sequences can be stored for each of the 24 function keys on the keyboard. The entered keystroke sequences are stored in nonvolatile memory, which means that the data is retained even if the power is turned off.

Note: There is a 7000 key limit on the length of each macro.

Recording Macros

Follow the steps below to store macros.

1. From the main 1451 screen, click **Macro**.
2. Click **Dialog**. The macro dialog screen will appear.



3. Click **Record**. The color of the Record button will change to green, indicating that it is active.
4. Click the F# that you wish to record. That button will be highlighted, and **`R F(#): (#) ks`** will appear on the operator status row of the 1451 screen. The **`R`** indicates Record, **`F`**(#) to show which F# was chosen for this macro and (#) **`ks`** to track how many keystrokes have been entered on this macro.
5. Type the keys to be associated with the macro.
6. Click the **Record** key again to save the macro and exit macro record mode. Press the **Quit** key to abandon the macro and exit record mode.

   Note: F# buttons that have not been associated with a macro will appear grayed out on the macro dialog screen. To confirm that a key has not been used and to avoid inadvertently recording over an existing macro, check the status line after selecting the F# key. If there is no macro associated with this key, the number of keystrokes (ks) will be displayed as 0.

Naming Macros

In addition to associating an F# to a macro, a name or short description may also be saved with each macro. To store a macro name:

1. After recording the macro, click **Name**.
2. Click the **F#** key. The Function Namer dialog box will appear.
3. Enter a name for the macro.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Playing Macros

Follow the steps below to initiate macros:

1. Click the **Play** key within the dialog box, or select **Play** from the Macro pulldown menu.
2. Click the F# key associated with the macro you wish to recall.
3. The macro will automatically be recalled.
4. The macro will automatically terminate once all keys have been played. If you desire, the macro may be terminated at any point by pressing the **Quit** key. If the key pressed to exit macro play mode was anything other than Quit, there will be a beep to notify you of the (possibly unintentional) cancellation.

Pauses and Delays

There are certain key sequences, such as a logon password, that a user may wish to exclude from a macro. At any point while recording a macro key sequence, the **Pause** key may be clicked to temporarily suspend record mode. The keystrokes from this point forward will not be recorded within the macro until macro record mode is resumed by pressing the **Record** key. The **Quit** key will abandon the macro, even while macro record is paused.

If the **Pause** key is pressed while in macro record mode, besides suspending recording, it will be embedded within the macro and cause the macro to pause automatically each time it is played back.

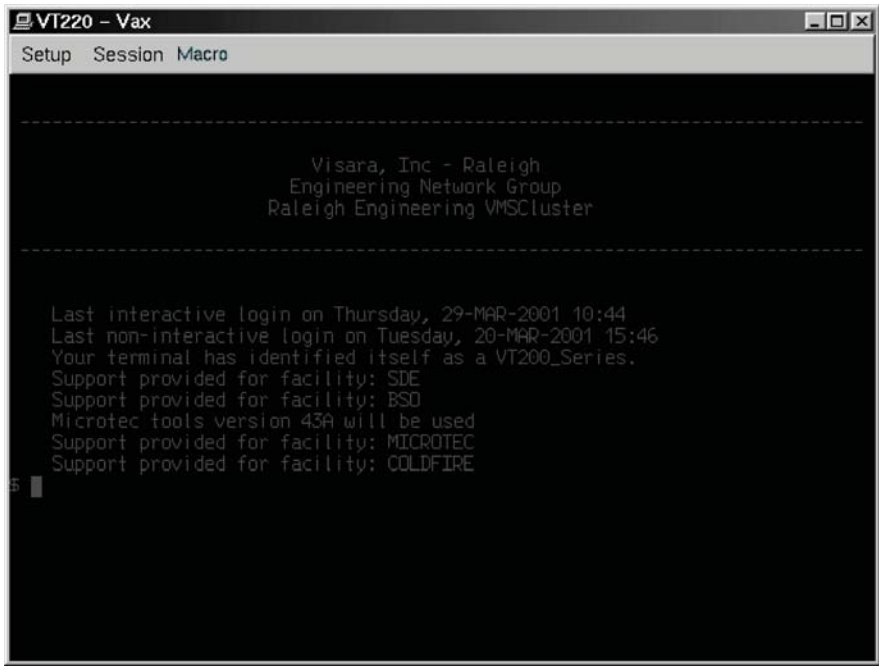
While playing back a macro the **Pause** key may be pressed to temporarily suspend the macro. At this point you may type in normal mode. Pressing the **Play** key will resume the macro. The **Quit** key will abandon the macro and return you to normal mode, even while macro play is paused.

If delays are desired within macros, the Delay key may be clicked while in record mode to embed an approximately one second delay within the macro. This may be clicked multiple times to extend the length of the delay.

VT220

What is VT220?

Like Telnet, VT220 enables you to access programs running on remote hosts.



VT220 enables the iCON to function as though it were a standard VT220 display. VT220 provides the following standard features:

- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.
- **Color Display** – The color monitor is programmable.
- **Multiple Sessions** – A maximum of 10 sessions can be accessed with this emulator.

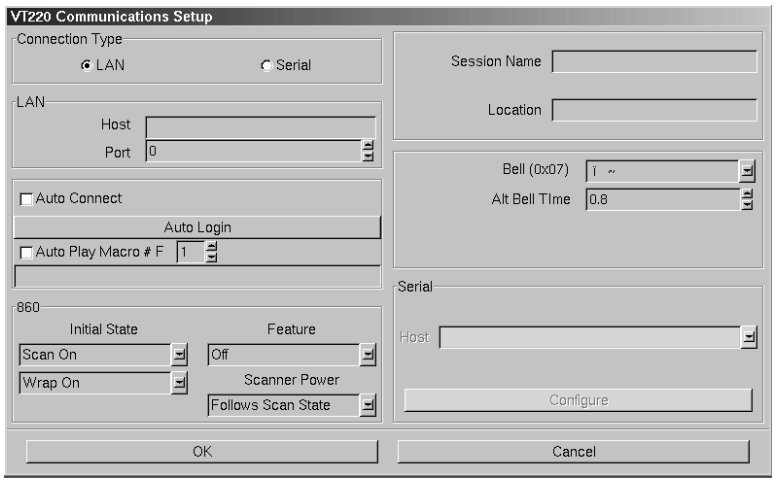
Setting up VT220

To setup a remote host:

1. Click the Start button in the lower left-hand corner of the screen. The application menu will appear.
2. Click **VT220**.
3. Click **Setup.**

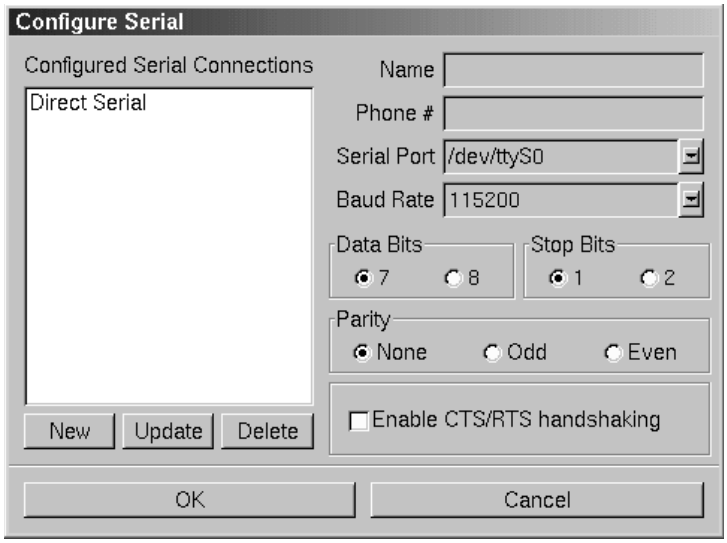
Note: When in full screen mode or when using a keyboard only (no mouse), the Setup menu may be accessed with **Ctrl-Shift-S**.

4. Click **Communications** from the Setup menu. This screen will appear:



- **Connection Type** – Select either a LAN or Serial connection.
- **LAN**
  - **Host** – Enter the Internet address of the VT220 server to which you wish to connect, for example, 192.168.1.1.
  - **Port** – If the host requires that a port number (other than port 23) be specified when connecting, select the port number using the up and down arrows or by typing the port in directly.
- **Auto Connect** – Select to auto connect at program start-up.
- **Auto Login** – Select to enable and configure auto login on connect.
- **Auto Play Macro** – Select the F# associated with the macro that should play upon connection. The name of the macro (if previously named) will appear in the window below the checkbox.
- **Session Name** – Enter the name to be displayed in the window title.

- **Serial**
  - **Host** – Enter the Internet address of the VT220 server to which you wish to connect, for example, 192.168.1.1.
  - **Configure** – Select to display the Serial Communications Configuration Panel. Enter the Baud rate, parity, data bits and stop bits for the serial connection.



Click **OK** to save changes and close Communications Setup, or **Cancel** to close and discard any changes.

Connecting to a VT220 session

VT220 will connect to the remote host. The host then will normally respond with a welcome and will lead you through its log in process. Log in, employing one of the following combinations:

- With the userid and password supplied by the administrator of the host
- With just a userid (some hosts do not require passwords)
- Neither, if the remote host has been set up for it.

To connect to a VT220 remote host from the main VT220 screen:

1. Click **Session** to open the VT220 Session menu.
2. Click **Connect**.

Once connected, use the menus, commands and features of the remote host to access and run VT220 applications.

Logging out of a remote host

1. When you have finished using the remote host, use the host's normal log out command.
2. To disconnect from the host, select **Disconnect** from the **Session** menu.

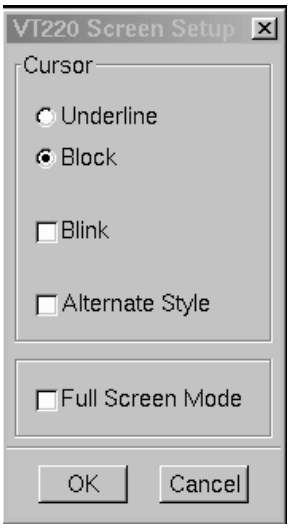
Configuring VT220 for an application

VT220 can be configured for a particular application by selecting **Screen**, **Keyboard** or **Color** from the Setup menu.

Screen setup

From the main VT220 application screen:

1. Click **Setup** to open the VT220 Setup menu.
2. Click **Screen**.



- **Cursor** – Choose either an underline cursor or a block cursor.
- **Blink** – Select for a blinking cursor.
- **Alternate Style** – If reverse video is being used, selecting this will make the cursor displayable.
- **Full Screen Mode** – Select to open the VT220 application in Full Screen Mode. VT220 must be closed and reopened for this setting to become effective.

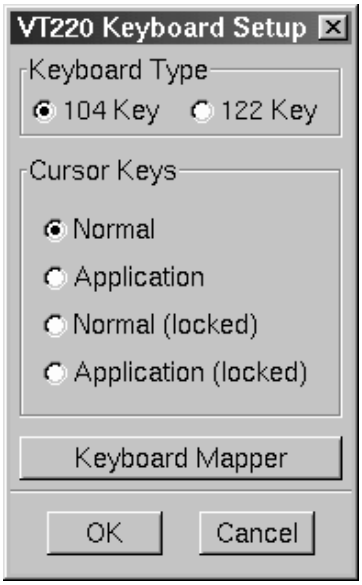
  Note: To access the taskbar or minimized applications on the taskbar while Full Screen Mode is in effect, hold down the **Shift** and **Alt** keys while pressing the tab key. Press the tab key repeatedly until the name of the application you wish to bring to the front is displayed.
  To access the setup menu from full screen mode, press **Ctrl-Shift-S**.

Click **OK** to save changes and close Screen Setup, or **Cancel** to close and discard any changes.

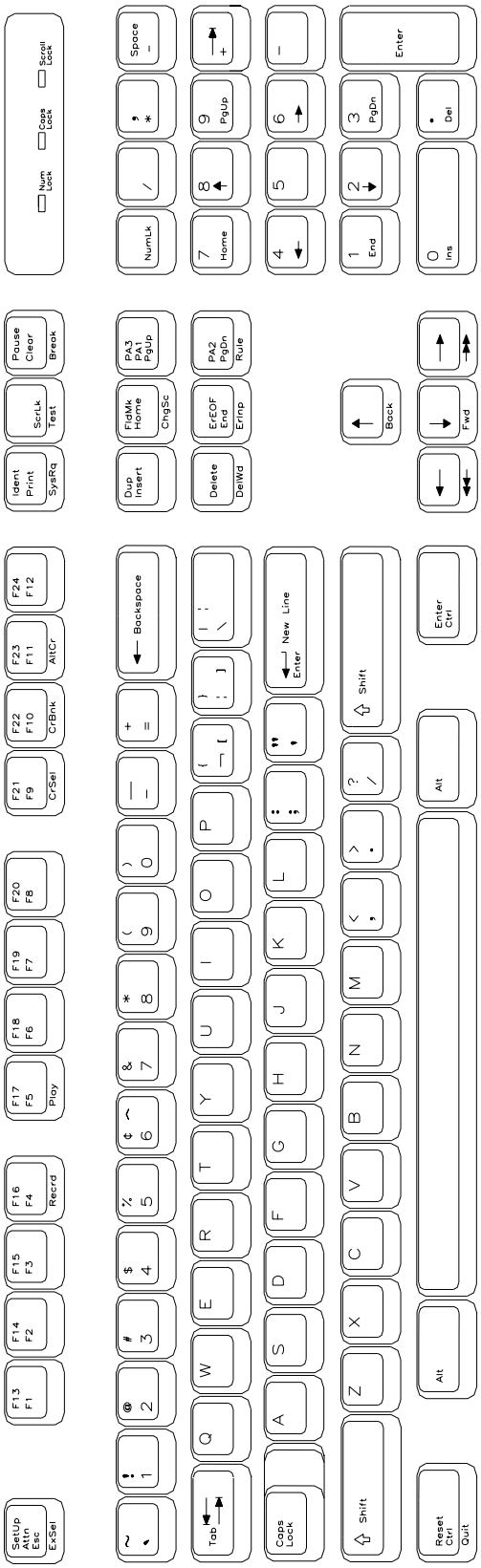
Keyboard setup

From the main VT220 application screen:

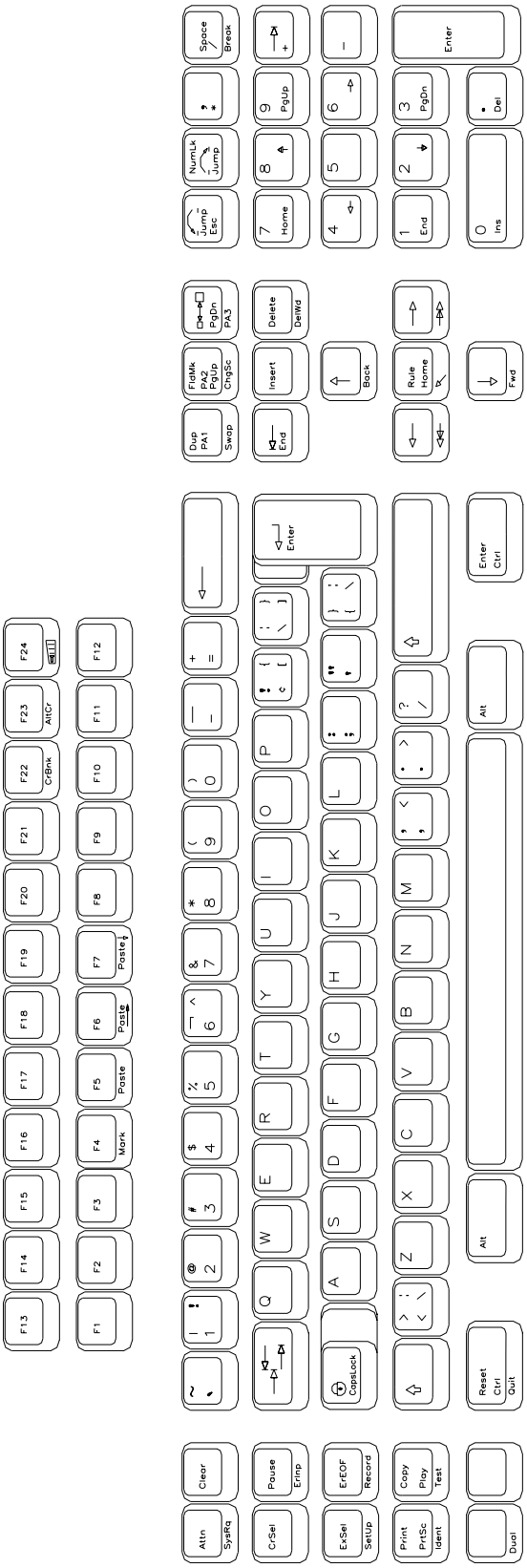
1. Click **Setup** to open the VT220 Setup menu.
2. Click **Keyboard**.



- **Keyboard Type** – Select either 104 or 122-key keyboard.
- **Cursor Keys**
  - **Normal –** Use normal cursor key escape sequences.
  - **Application –** Uses application cursor key escape sequences. The keypad generates application control sequences.
  - **Normal (locked) –** Uses normal cursor key escape sequences. The application cannot override the defined value.
  - **Application (locked) –** Uses application cursor key escape sequences. The application may not override the defined value.

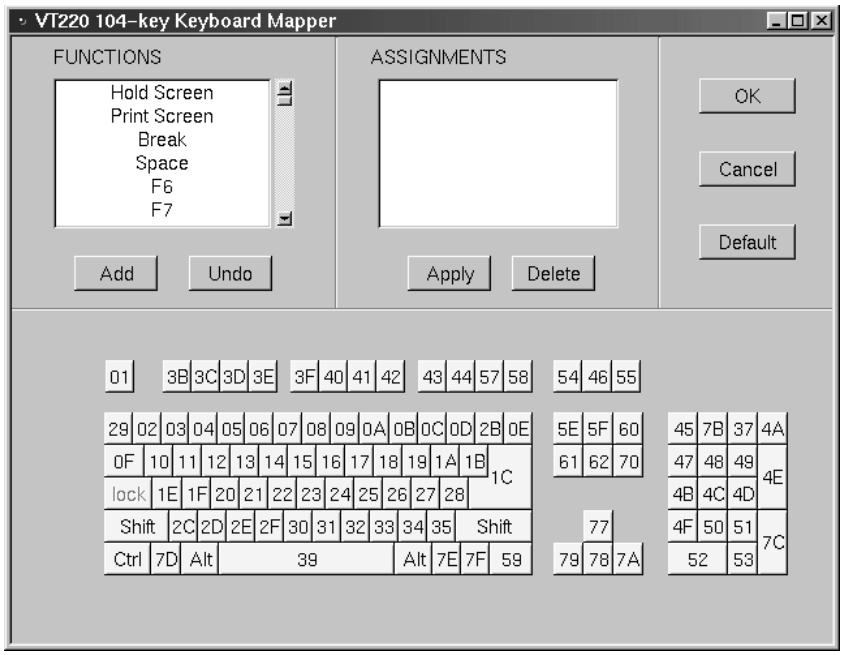


VT220
104-key Keyboard Layout



VT220
122-key Keyboard Layout

- **Keyboard Mapper** – The key assignment (mapping) may be verified or changed as necessary for use in VT220 applications.



To determine which key is currently assigned to the VT key, click the appropriate VT key in the Functions box and the assigned value will be displayed in the Assignments box. Alternatively, on the keyboard layout, using the mouse click on the key to which the value needs to be displayed, the key will be displayed in the Functions box and the assigned value in the Assignments box.

To change the key assignment:

1. Using the mouse click on the key that needs to be changed on the keyboard layout or alternatively, choose the function from the Functions box.
2. Click **Add** below the Functions box.
3. Assign the new assignment required for the key selected. If a key combination is desired, click either the **Shift**, **Control**, or **Shift + Control** buttons.
4. Click **Apply** when satisfied with selection or click **Undo** to reassign.

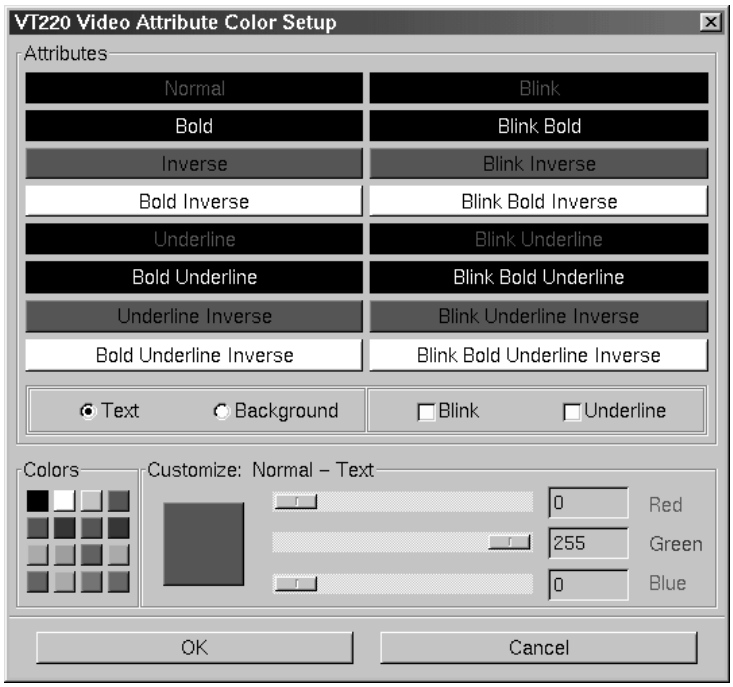
   Note: A function can be applied to multiple keys. Assigning a function to a key does not unassign it from a previous definition.
5. Click **OK** to save changes and Exit, or **Cancel** to discard changes and exit. To return the key assignments to their default state, click **Default**.

Color setup

From the main VT220 application screen:

1. Click **Setup** to open the VT220 Setup screen.
2. Click **Colors**.
3. Click **Attributes** or **ANSI**.

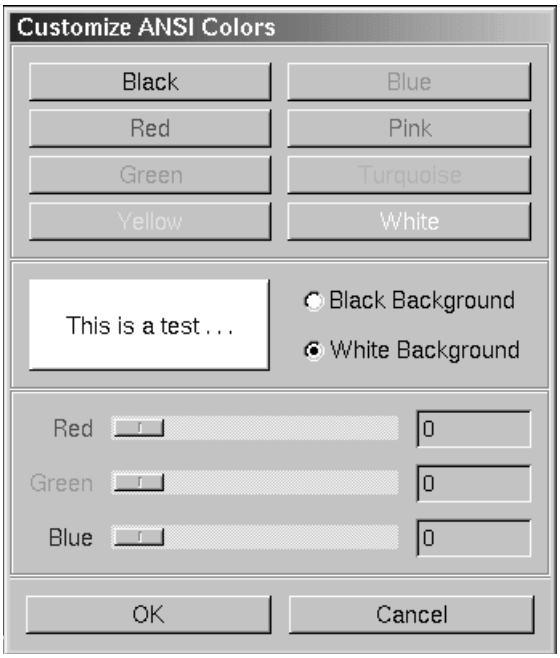
Attributes



To change the text or background color in VT220 applications:

1. Click either the **Text** or **Background** button.
2. Click the Attribute to be changed. The current color will appear in the Customize box.
3. Change the color by clicking one of the 16 color blocks, or customize the color by using the sliders. The colors in the attribute block will change accordingly.
4. Click **Blink** and/or **Underline** to apply to the selected attribute.
5. Click **OK** to save changes and exit, or **Cancel** to discard changes and exit.

ANSI



To change the color of the text or background for a VT220 session:

1. Select a color for the text.
2. Select black or white as the desired background color.

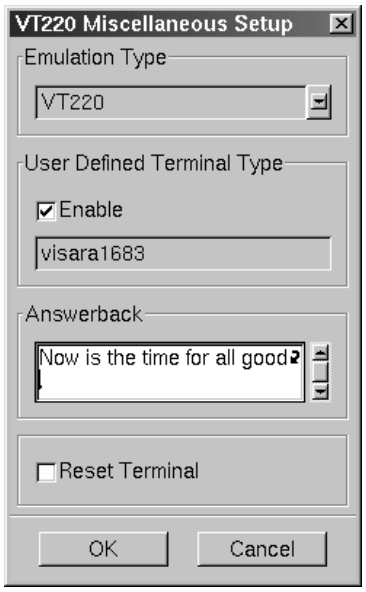
The shades of text color may be adjusted using the sliders or by entering a RGB value. The changes will appear, as they are made, in the test block.

Click **OK** to save changes and exit, or **Cancel** to discard changes and exit.

Miscellaneous setup

From the main VT220 application screen:

1. Click **Setup**.
2. Click **Miscellaneous**. The VT220 Miscellaneous Setup screen is shown below:



- **Emulation Type** – Displays emulation type to be used (only VT220 currently supported)
- **User Defined Terminal Type** – Terminal type string sent to the host.
- **ANSWERBACK** – Enter the Answerback string.
- **RESET Terminal** – Select to reset the Emulator.

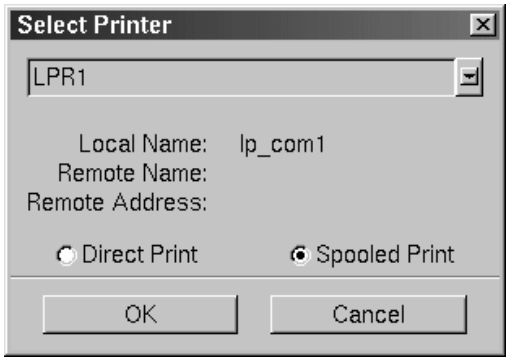
3. Click **OK** to save changes and exit, or **Cancel** to discard changes and exit.

Printer setup

From the main VT220 application screen:

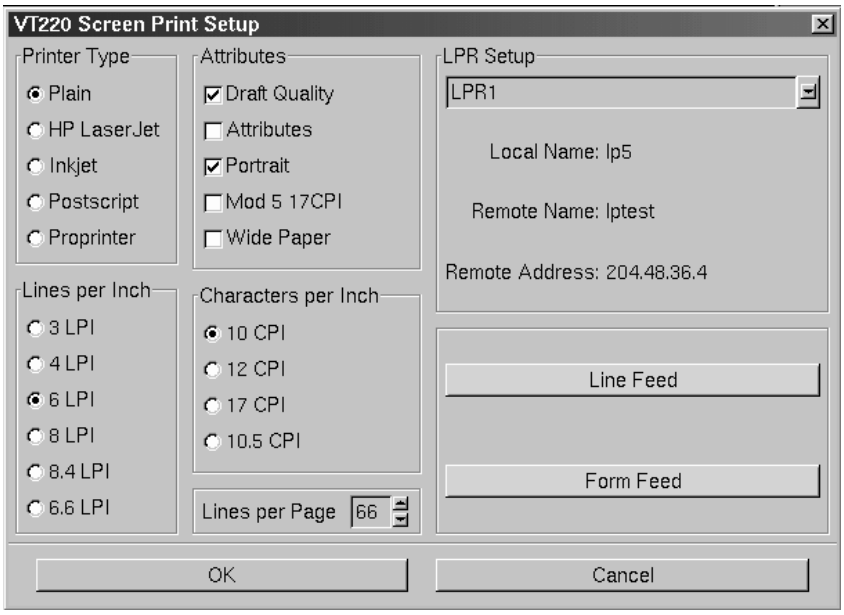
1. Click **Setup**.
2. Click **Printer**.
3. Select **Host Print** or **Screen Print**.

Host Print



Select the appropriate printer from the list of configured LPR printers.

Screen Print



- **Printer Type –** Specifies the printer driver to use when printing.
- **Lines per Inch –** Specifies the number of Lines Per Inch to print.
- **Characters per Inch –** Specifies the number of Characters Per Inch to print.
- **Lines per page** – Specifies the number of Lines per Page to print. Selectable range is 0-255.
- **Draft Quality –** Prints draft quality when selected. Otherwise printing is letter quality.

- **Attributes –** If selected, prints intensified characters as bold and underlined when required.
- **Portrait** – If enabled, prints in Portrait mode. If disabled, prints in Landscape mode.
- **Mod 5 17 CPI** – If selected, printing automatically changes to 17 CPI (characters per inch) if the application screen is Mod 5.
- **Wide Paper** – If enabled, allows printing of more than 80 characters per line. This setting is generally used when Proprinter is selected as the Printer Type.
- **LPR Setup** - Select the defined printer that will receive VT220 print jobs. Once selected, the Local Name, Remote Name, and Remote Address will be displayed below the LPR Printer Window.
- **Line Feed** – Sends an immediate Line Feed to the selected printer.
- **Form Feed** – Sends an immediate Form Feed to the selected printer

Macro Record/Playback

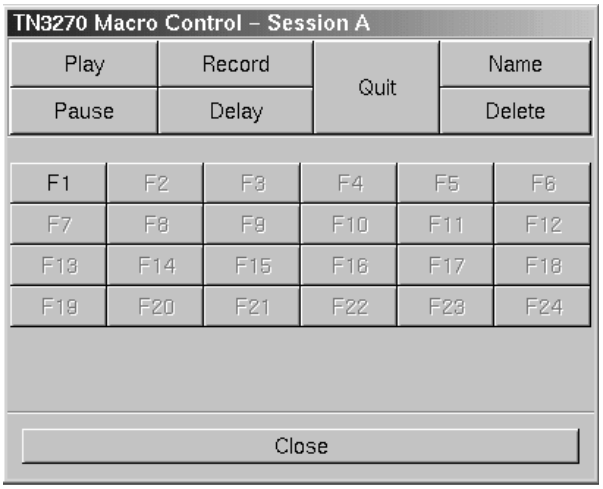
The VT220 macro function enables you to reduce the number of keystrokes required for a frequently repeated entry such as a logon sequence. Unique keystroke sequences can be stored for each of the 24 function keys on the keyboard. The entered keystroke sequences are stored in nonvolatile memory, which means that the data is retained even if the power is turned off.

Note: There is a 7000 key limit on the length of each macro.

Recording Macros

Follow the steps below to store macros.

1. From the main VT220 screen, click **Macro**.
2. Click **Dialog**. The macro dialog screen will appear.



3. Click **Record**. The color of the Record button will change to green, indicating that it is active.

4. Click the F# that you wish to record. That button will be highlighted, and `R F(#): (#) ks` will appear on the operator status row of the VT220 screen.
   The `R` indicates Record, `F`(#) to show which F# was chosen for this macro and (#) `ks` to track how many keystrokes have been entered on this macro.
5. Type the keys to be associated with the macro.
6. Click the **Record** key again to save the macro and exit macro record mode. Press the **Quit** key to abandon the macro and exit record mode.

   Note: F# buttons that have not been associated with a macro will appear grayed out on the macro dialog screen. To confirm that a key has not been used and to avoid inadvertently recording over an existing macro, check the status line after selecting the F# key. If there is no macro associated with this key, the number of keystrokes (ks) will be displayed as 0.

Naming Macros

In addition to associating an F# to a macro, a name or short description may also be saved with each macro. To store a macro name:

1. After recording the macro, click **Name**.
2. Click the **F#** key. The Function Namer dialog box will appear.
3. Enter a name for the macro.

Click **OK** to save changes and exit, or **Cancel** to exit and discard any changes.

Playing Macros

Follow the steps below to initiate macros:

1. Click the **Play** key within the dialog box, or select **Play** from the Macro pulldown menu.
2. Click the F# key associated with the macro you wish to recall.
3. The macro will automatically be recalled.
4. The macro will automatically terminate once all keys have been played. If you desire, the macro may be terminated at any point by pressing the **Quit** key. If the key pressed to exit macro play mode was anything other than Quit, there will be a beep to notify you of the (possibly unintentional) cancellation.

Pauses and Delays

There are certain key sequences, such as a logon password, that a user may wish to exclude from a macro. At any point while recording a macro key sequence, the **Pause** key may be clicked to temporarily suspend record mode. The keystrokes from this point forward will not be recorded within the macro until macro record mode is resumed by pressing the **Record** key. The **Quit** key will abandon the macro, even while macro record is paused.

If the **Pause** key is pressed while in macro record mode, besides suspending recording, it will be embedded within the macro and cause the macro to pause automatically each time it is played back.

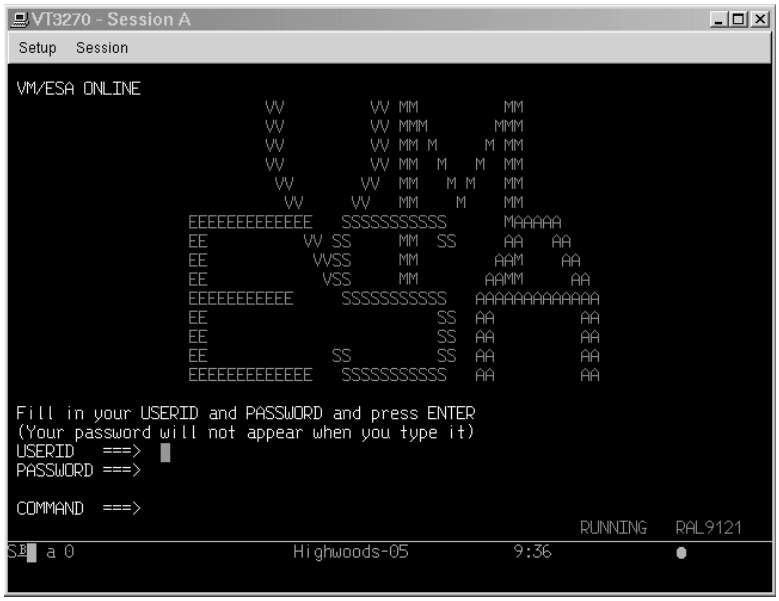
While playing back a macro the **Pause** key may be pressed to temporarily suspend the macro. At this point you may type in normal mode. Pressing the **Play** key will resume the macro. The **Quit** key will abandon the macro and return you to normal mode, even while macro play is paused.

If delays are desired within macros, the Delay key may be clicked while in record mode to embed an approximately one second delay within the macro. This may be clicked multiple times to extend the length of the delay.

VT3270

What is VT3270?

Like Telnet, VT3270 enables access to programs running on remote hosts. Unlike Telnet, VT3270 provides the means to access 3270 programs running on IBM mainframes.



VT3270 enables the iCON to function as though it were a 3279 mod 2, mod 3, mod 4, or mod 5 terminal. Unlike Telnet, VT3270 can manipulate the entire screen image, fields and function keys, in a way identical to a 3270 terminal. VT3270 provides the following standard features:

- **Window Menus** – The window menus offer simplicity and ease of use for all setup functions.
- **Color Display** – The color monitor is programmable in seven colors.
- **Switchable Screen Formats** – VT3270 supports four (4) screen sizes that can be selected from setup menus. The server to which the VT3270 client attaches must be configured to support the screen size used. Check with your system administrator.
- **Mono/DualCase Mode** – Allows characters to be displayed as all uppercase characters or as upper- and lowercase characters.
- **Mark Unprotected Field Indicator** – The 1480 CUT Emulator can be requested to mark unprotected fields with a special character.
- **Row/Column Indicator** – Displays the current cursor location on the operator status row.
- **Numeric Lock** – Allows a field to be defined to accept only numeric characters and the Period, Minus, and Dup keys. The comma may be substituted for the period on some international keyboards.
- **Multiple Sessions** – A maximum of 10 sessions can be accessed with this emulator.

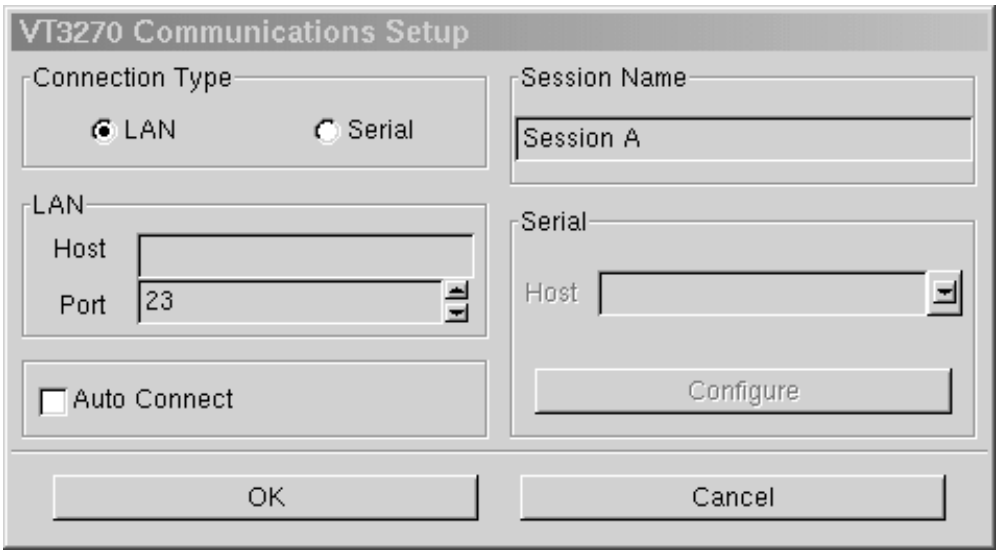
Setting up a remote host as a 3270 terminal

To setup a remote host:

1. Click the Start button in the lower left-hand corner of the screen. The application menu will appear.
2. Click **VT3270**. The main VT3270 screen will appear with two menu options, **Setup** and **Session**.
3. Click **Setup.**

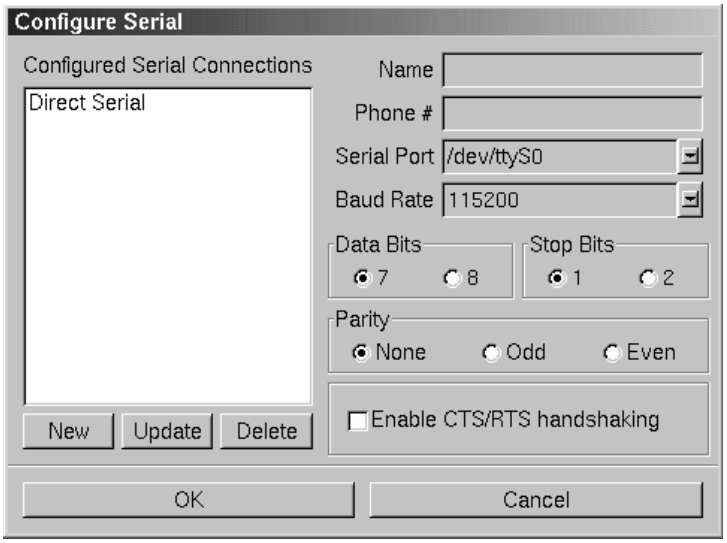
Note: When in full screen mode or when using a keyboard only (no mouse), the Setup menu may be accessed with **Alt-Shift-S**.

4. Click **Communications** from the Setup menu. This screen will appear:



- **Connection Type** – Select **LAN** to configure a VT3270 LAN session. Select **Serial** to configure a Serial session.
- **LAN**
  - **Host** – Enter the Internet address of the VT3270 server to which you wish to connect, for example, 192.168.1.1.
  - **Port** – If the host requires that a port number (other than port 23) be specified when connecting, select the port number using the up and down arrows or by typing the port in directly.
- **Auto Connect** – Select to auto connect at program start and to reconnect automatically if disconnected by the server.
- **Session Name** – Enter the name to be displayed in the window title.

- **Serial**
  - **Host** – Enter the Internet address of the VT3270 server to which you wish to connect, for example, 192.168.1.1.
  - **Configure** – Select to display the Serial Communications Configuration Panel. Enter the Baud rate, parity, data bits and stop bits for the serial connection.



Click **OK** to save changes and close Communications Setup, or **Cancel** to close and discard any changes.

Connecting to a VT3270 session

VT3270 will connect to the remote IBM mainframe host. The host then will normally respond with a welcome and will lead you through its log in process. Log in, employing one of the following combinations:

- With the userid and password supplied by the administrator of the host
- With just a userid (some hosts do not require passwords)
- Neither, if the remote host has been set up for it.

To connect to a VT3270 remote host from the main VT3270 screen:

1. Click **Session** to open the VT3270 Session menu.
2. Click **Connect**.

Once connected, use the menus, commands and features of the remote host to access and run 3270 applications.

Logging out of a remote host

1. When you have finished using the remote host, use the host's normal log out command.
2. To disconnect from the host, select **Disconnect** from the **Session** menu.

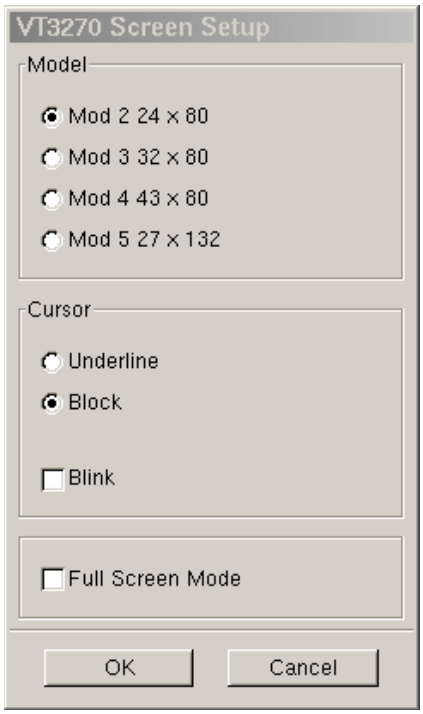
Configuring VT3270 for an application

VT3270 can be configured for a particular application by selecting **Screen**, **Keyboard** or **Color** from the Setup menu.

Screen setup

From the main VT3270 application screen:

1. Click **Setup** to open the VT3270 Setup menu.
2. Click **Screen**.



- **Model Size** – Select the mod required by the design of the application program. Applications are designed to use one of the above mods, based on the number of rows per screen and characters per row, respectively. The default is Mod 2.
- **Cursor** – Choose either an underline cursor or a block cursor. Select **Blink** for a blinking cursor.
- **Full Screen Mode** – Select to open the VT3270 application in Full Screen Mode. VT3270 must be closed and reopened for this setting to become effective.

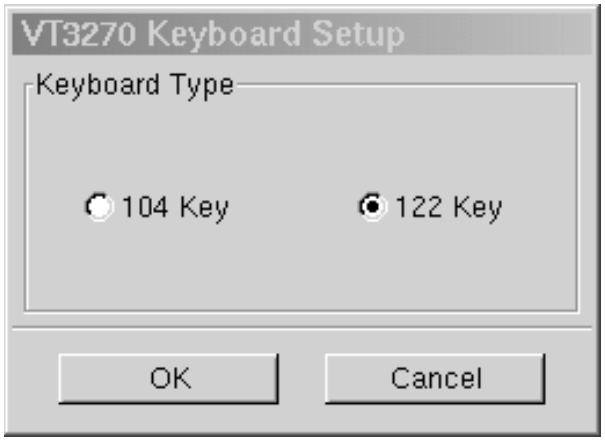
  Note: To access the taskbar or minimized applications on the taskbar while Full Screen Mode is in effect, hold down the **Shift** and **Alt** keys while pressing the tab key. Press the tab key repeatedly until the name of the application you wish to bring to the front is displayed.
  To access the setup menu from full screen mode, press **Alt-Shift-S**.

Click **OK** to save changes and close Screen Setup, or **Cancel** to close and discard any changes.

Keyboard setup

From the main VT3270 application screen:

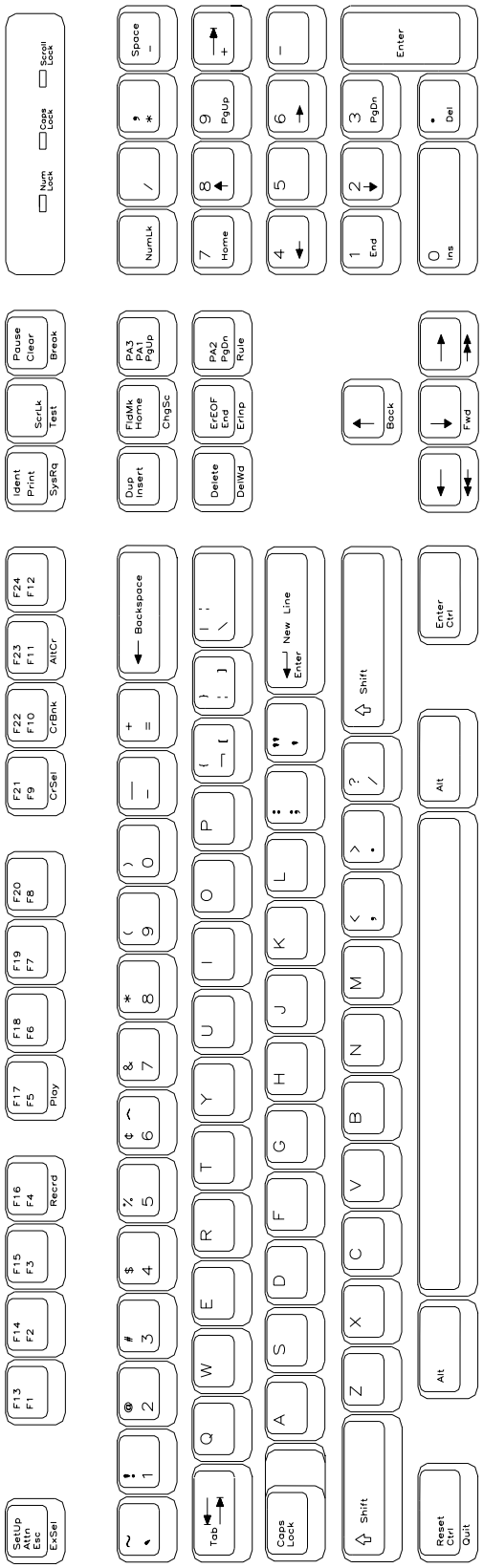
1. Click **Setup** to open the VT3270 Setup menu.
2. Click **Keyboard**.



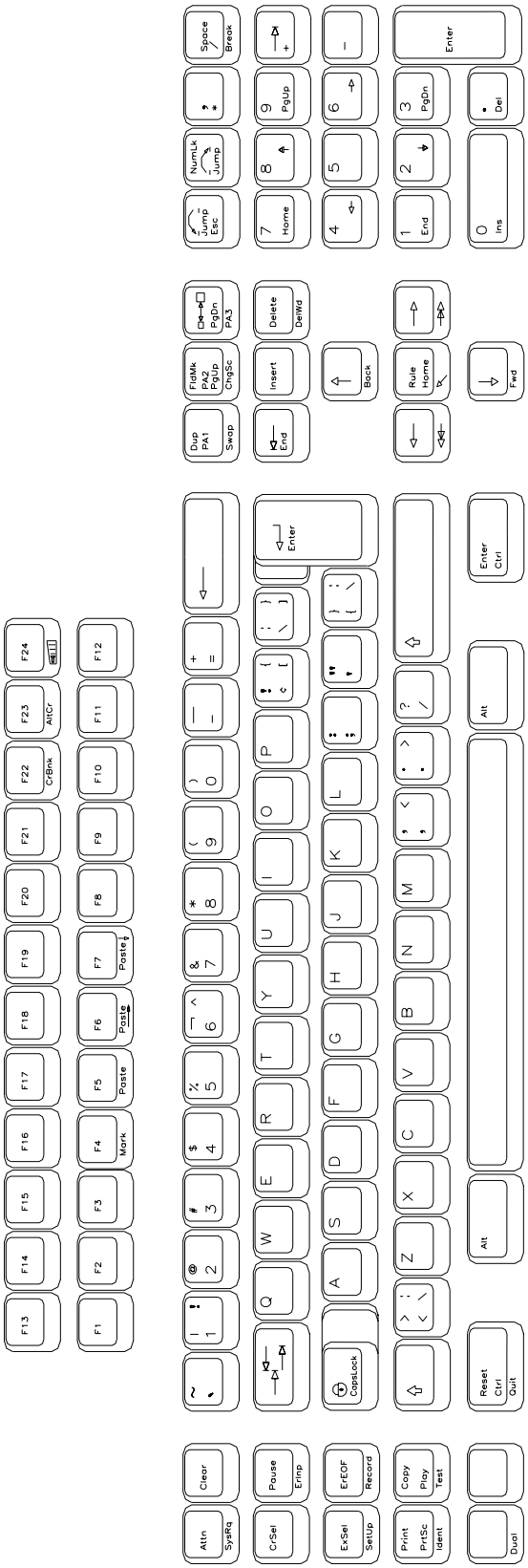
- **Keyboard Type** – Select either the 104 or 122-key keyboard.

Click **OK** to save changes and Exit, or **Cancel** to discard changes and exit. To return the key assignments to their default state, click **Default**.

Note: VT3270 application must be closed and restarted for changes to become effective.



VT3270
104-key Keyboard Layout

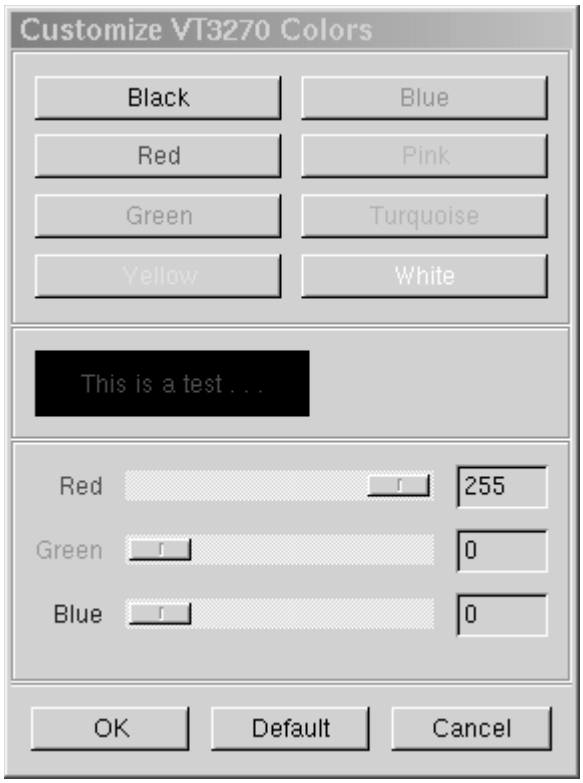


VT3270
122-key Keyboard Layout

Color Setup

From the main VT3270 application screen:

1. Click **Setup** to open the VT3270 Setup menu.
2. Click **Colors**.



1. Use the arrows to select colors from the Colors list on the right. Select for protected, unprotected, normal and highlighted fields.
2. Click **OK** to save changes and close Color Setup, or **Cancel** to close and discard any changes.

Appendix A

iCON Administrator's Worksheet

TCP/IP Network Parameters

LAN 1 IP Address				
LAN 1 Subnet Mask				
LAN 1 Default Gateway (router)				
LAN 2 IP Address				
LAN 2 Subnet Mask				
DNS Server				

Firewall Considerations

Inbound TCP Ports

ICON (1025)	Used for all iCON and VT5250 traffic
HTTP (80)	Used to download VT5250 and read help files
HTTPS (443)	Used for remote administration via secure web browser

Outbound TCP Ports

ICON (1025)	Used for iCON-to-iCON communications
FTP (21)	Used to download software updates from FTP.VISARA.COM

Twinax Connector Log		
Quad Twinax Adapter slot and port*	ICON Session Name	Description
1A		
1B		
1C		
1D		
2A		
2B		
2C		
2D		
3A		
3B		
3C		
3D		
4A		
4B		
4C		
4D		
5A		
5B		
5C		
5D		

*Card slots are numbered *from* ***right to left*** *when facing the back of the unit.*
Ports are lettered *from* ***top to bottom.***

Appendix B

iCON Dial-In

The iCON will support dial-in through a serial modem The setup for dial-up networking should have the following parameters to dial-in to an iCON.

Name: icon

Password: icon

No on encrypted password or data

Network Protocol : TCP/IP

TCP/IP Setting for dialing unit:

Select Server Assigned IP Address

Select Server Assigned name server address

Software and IP Header Compression can be enabled.

The iCON will assign an IP address of 192.168.0.21 to the calling unit. The address of the iCON will be 192.168.0.20. The 192.168.0.20 IP address can be used by the browser and the twinax session manager to see the twinax sessions at the iCON.

The above applies to the iCON-1T or iCON-XT. The iCON-XT uses COM 1 serial port (the only serial connector on back of unit).

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